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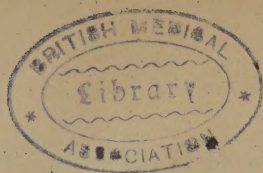


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INTERNATIONAL MEDICAL MAGAZINE.

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[No. 1.]

LECTURE.

I. INTERESTING CASE OF CHOLECYSTITIS SIMULATING APPENDICITIS.

II. A RARE CASE OF PNEUMONIA WITH MENINGITIS.

III. AN UNUSUAL PERCENTAGE OF CASES OF MILK LEG FOLLOWING TYPHOID FEVER.¹

BY J. M. DA COSTA, M.D.,

Professor of Theory and Practice of Medicine, Jefferson Medical College, Etc.

I.

A CASE demanding our attention is one which presented great diagnostic difficulty and during which at one time the patient was gravely ill but is better now. The man is 32 years old and was never ill before. He began feeling badly three weeks before coming to the hospital. He had headache, pain in back and legs, slight diarrhea, some fever and sweating. These symptoms were all aggravated the week preceding his admission. He had a rather high fever when admitted, his temperature being 103°. This continued, although very irregular in range, going down for a time and then shooting up, once or twice reaching the normal but remaining so only a short time. His tongue was coated, and tremulous, the pulse dicrotic, and the urine contained a trace of albumen. A natural supposition from the history of the case and the patient's age was that he was suffering from typhoid fever. This idea was soon set aside, however, because of the irregularity of the temperature. Confirming our view that this was not the disease was the fact that the Widal test was negative.

About this time there was a little pain over the left lung and a few râles were heard, there was also a slight pleurisy which soon passed away. Then there was a sharp pain felt over the region of the liver, with a slight

¹ Clinical lecture delivered at the Pennsylvania Hospital, Philadelphia.

discoloration of the conjunctiva. Bile was also found in the urine. The liver became enlarged and the abdomen was considerably swollen and tender. The recti muscles were also found to be rigid, this being most noticeable on the right side. At about the time these symptoms showed themselves, the temperature went up to 104° , and again was very irregular in its course. There were no malarial parasites found in the blood.

The things connected with this peculiar symptom of irregularity in temperature were tenderness, spontaneous pain in the right abdominal region, and the presence of bile in the urine.

Now the question naturally arose as to what was the matter with the man. With this array of symptoms we had a difficult and obscure case for diagnosis. Barring the lung trouble, which was never of much moment and which soon disappeared, and typhoid fever which was never seriously considered, what might we be dealing with? When symptoms such as these present themselves—tenderness in right iliac fossa, rigidity of the recti muscles, especially the right one, with a high fever, the most natural supposition would be that we were dealing with a case of appendicitis. Indeed, few patients are saved from the surgeon's knife under circumstances of this kind. And we seriously entertained the intention for a time of calling it "appendicitis." But we soon found that the symptoms were not settled in this place. The tenderness disappeared from below and became localized higher up. So we sought other possibilities. There were two conditions which might obtain and a discussion of these we think will be instructive, as the cases when they need to be differentiated are rather rare. The first condition was that of appendicitis of the upper part of the appendix. This condition may occur as well as of the lower part which gives tenderness, lower in the iliac fossa. There may be tenderness localized high up, with inflammation and suppuration of that part of the appendix. I once recognized this condition in a woman whom I was treating and recommended an operation. And I thought seriously of that conclusion here. But this theory would not account for the presence of bile in the urine. Neither would it account for the spontaneous pain. It must be remembered that there was not merely tenderness but that there was pain and *spontaneous* pain. So this view of the case was given up and I finally settled on what I am now certain is the correct diagnosis, namely, cholecystitis. We had here then an inflammation of the gall ducts and gall bladder, especially of the latter. The points in favor of this were first, the irregularity of the fever, second, the presence of bile in the urine, third, the site of tenderness and pain was favorable to this condition. Then also of considerable significance was the rigidity of the right rectus muscle which points to this condition. You may say that this was of no help in differentiating between cholecystitis and appendicitis because it is found in both affections. This is true, but, taken in connection with the other signs which point to the former trouble, it gives weight to the conclusion which I reach.

This condition sometimes follows exposure to cold; sometimes it is a result of typhoid fever and sometimes originates as diseases elsewhere—without any particularly noticeable cause. If this irregularity of temperature had gone on for some time or if the patient had had chills I should have had him operated upon. This would have indicated that the inflammation was purulent and under these circumstances the best chance would have been given him by operation.

As to treatment in this case, the man was purged by repeated small doses of calomel, and by the use of Rochelle salts. He was given in addition fifteen grains of the acetate of potassium and five grains of iodide of sodium three times a day. A blister was also applied over the region of the gall bladder.

The patient is now convalescent. I place no stress on the albumen in the urine. The kidney is still excreting a small amount of bile. But these will both pass away in a short time.

II.

This case is a very interesting one, although it has not much of a history. The man is an Italian, unconscious when admitted to the hospital, and the only thing we have succeeded in getting from him since is that he had been ill only three days before that time. All we can do is to give his condition when brought to the hospital. He was in a state of collapse; his feet and hands were cold, his face was flushed, his hands clinched, while the muscles of his back and limbs, and especially of the cervical region, were rigid; there was deviation of the eyes to the right, the pulse was rapid and thready, respiration shallow, and he was cyanotic. His temperature was 103° . This has since come down to normal. He had irregular circulation but the pulse never was high, ranging from 72 to 80. There was no cardiac murmur. A partial pneumonia of the right lung was made out.

Here then was a difficult diagnostic problem to solve. We thought of cerebro-spinal fever, of typhoid fever, of tubercular meningitis, and of pneumonia with meningitis. We made investigations for all these diseases.

1. *Tubercular Meningitis.* Adults may have this disease, but it is rarer than in children. But in either case it is insidious in its onset. Marked cerebral symptoms only come late. There are 10 or 12 days of headache and other symptoms before the cerebrum is notably affected. In this case there had been only 3 days, and there was unconsciousness and collapse. So that was not the disease here.

2. *Cerebro-Spinal Fever.* Here there was more difficulty in excluding this disease. The cerebral symptoms are rapid in onset in this disease. If there had been an epidemic of this fever in progress at this time we should have called this a case of this sort. But isolated cases are extremely rare. Neither was there any eruption on this man. I do not lay particular

stress on the eruption, however, for two reasons: First, it is not a necessary accompaniment of this fever, and second, it is especially apt to be absent in sporadic cases. Some doubt remained for a time as to whether this was the ailment here.

3. *Typhoid Fever*. You ask if typhoid ever occurs with as marked symptoms as these, and I answer yes, the typhoid bacillus may light up an inflammation in the meninges as it does in the intestines, but not ulceration. There is not the true typhoid delirium in such cases, but meningeal symptoms are manifested. In typhoid fever with meningitis there is high temperature with perhaps the same rise as in first week of the fever. But the temperature here soon began to decrease. This alone would have distinguished it from typhoid fever, and beside there was no eruption, diarrhea or other signs of typhoid fever.

4. *Pneumonia*. We think this was the true condition and that we have here a rare case of pneumonia with cerebral complications. There is an inflammation of the meninges in these cases but we are not sure of the pathological lesions. In some cases the same bacillus has been found in the meninges that is in the lungs. Meningitis comes on early in this complication. Here were the evident cerebral symptoms early in the attack with the physical signs of pneumonia in the lower part of the right lung. This then was the diagnosis, and the outcome has confirmed it.

Meningitis may mask several diseases and render diagnosis difficult. Meningitis in itself was not discussed as a probability in this case because there must be a cause for it. Generally it results from a blow or injury of some sort.

The treatment of this man has been continuous application of an ice-bag to his head in the way of local relief. Iodide of potassium was given in the amount of ten grains every four hours. Some four doses of digitalis were given as indications arose. Lastly we were forced by his weakness and collapse to give a moderate amount of whiskey. This was done very reluctantly but his condition absolutely called for it. On the whole this was not a bad treatment for pneumonia, but more attention was paid to the meningeal symptoms.

The man is convalescent now. There is no rigidity except a trace in the left arm, his heart is normal, and he has a bright look. We learn from this that such a complication though a grave one may end in recovery.

III.

Of the 135 soldiers who have been treated for typhoid fever in the Pennsylvania Hospital, 16 have suffered from milk leg. This is a percentage of nearly 12 per cent., while the general proportion is about 1 or 2 per cent. This greater tendency among the soldiers is due to some cause as yet unknown. If they had been subjected to long marches and thus on their feet often until more or less exhausted, it might be ascribed

to that. But many of them are from camps where no long marches have been made, some, however, being from Porto Rico. Of the 16 cases five were in the left leg and 11 in both legs.

As to the pathology of this condition it is the common belief that it is due to phlebitis. This was my own belief until a study of cases convinced me that this was not necessarily the cause. The real reason is thrombosis of a vein. There may or may not be inflammation present. This explains why there is sometimes marked tenderness while in other cases there is no tenderness at all. In all cases there is clotting, disturbance of circulation, and swelling. This pressure of the clot may cause secondary affection of the accompanying artery which results in arterial thrombosis and perhaps gangrene of the foot. This is rare, however. The morbid condition of the vein may lead to fatal results, but this is also rare.

In the one case we show, the attack occurred the fiftieth day of the disease, in the internal saphenous vein of both legs. There was no rise of temperature and but little swelling. The veins still have a cordy feeling to the touch. The second case was seized on the fifty-ninth day of the fever, only in the calves of both legs.

The treatment should be elevation of the leg. The pain may be relieved by applying hot lead-water and laudanum or hot witch-hazel. The former in our experience seems to afford the most relief; a light laxative is given unless diarrhea of the fever persists. Subsequently if there is much pain, belladonna plaster in narrow strips is applied or belladonna ointment instead. Absolute rest is essential. The secret of success is principally in not allowing the patient to get out of bed too soon; when he does get up mechanical support should be given by bandages or elastic stocking. I have known cases where the patient could not walk without pain and swelling eighteen months after the attack. Milk leg, while painful and tedious, is not to be considered a grave complication of typhoid fever.

Professor Tyson on the General Practitioner. In the course of an address delivered at the Eighteenth Anniversary of the Founding of the Gloucester County Medical Society, Professor Tyson said: "To sum up, then, the general practitioner of the present day is, in point of fact, a man who practices all the departments of medicine as distinguished from surgery; who practices midwifery, surgery and gynecology, except the major operations demanded by it and by surgery, and who treats also the minor affections of the eye and ear. While this is practically true of the general practitioner of the city, the field must be extended in the country to include all operations, delay in which is dangerous to life. And it is the general practitioner in the country, I take it, you have in mind when you ask me to treat the subject. It is in the country only, in fact, that the general practitioner in the truest sense can be met, so that in a word the general practitioner is the country practitioner."

ORIGINAL PAPER.

*CHRONIC PLUMBISM FROM DRINKING-WATER.*¹

BY L. SMIRNOW, M.D.,

New Britain, Conn.

INTRODUCTION.

THE subject of chronic plumbism from drinking-water, although of long standing, is one which has never received sufficient attention from the general medical practitioner. Numerous attempts have been made, in this country as well as in Europe, to convince the physician of the dangers arising from the use of lead pipes as conduits for drinking-water, and to inform the public that they are constantly exposed to a deadly poison, the effects of which, when accumulated in sufficient quantity, are in many cases too horrible to witness. Notwithstanding these plausible efforts, the public has remained blind to this source of danger and the physician unconscious of the true cause of the disease in many obscure cases. The greater part of literature rests in silence, and the efforts of the authors have remained null. Little or no action has been taken by any legislative administration, in any part of the world, to substitute lead pipes by conduits of a safer kind, and thereby insure the health of the public, and little or no précaution has been taken by the public itself against this danger. As a consequence of this, numerous obscure cases of plumbism walk the streets of the many cities; the cause of their malady being undetected, they are given up as "hysterical," etc.: the disease thus allowed to take its course has but one goal to reach, *i. e.*, death.

It has been stated by those who favor the use of lead pipes (1) that the cheapness of the metal and the ease with which it undergoes moulding into any shape desirable, and (2) the rarity of cases of chronic plumbism from this source renders it a safe and convenient metal for the purpose. The former argument can readily be disposed of by stating the fact that safer conduits can be made at an equal price or a trifle higher, and also modern improvements in the arts equally extend to the construction and fitting of service pipes. It is the second statement that requires our attention, since it deals with the public health, and its truth or falsehood is to be determined. It is just this serious mistake that has allowed a great multitude of people to endure endless suffering, and many others to reach their graves prematurely. And although my main object is to point out the quantity of lead in drinking-water that may prove injurious, I will endeavor to

¹A portion of a thesis entitled: "The Quantity of Lead in Drinking Water that may Prove Injurious to Man, and Improvements on the Separation of Lead from Urine by Electrolysis."

show the many obscure cases that have been treated for jaundice, dyspepsia, etc., without effect, until finally the true cause of the disorder has been accidentally discovered and a cure effected by removing the same. It will be seen, therefore, that the statement of the rarity of such cases is a proof of ignorance of the facts, and a lack of comprehension in regard to possibilities on the part of those making such statements. From the testimonies of good authorities, as will be seen in the following pages, it appears certain that a great number of cases of chronic lead poisoning went to the termination without ever having been detected, and many hundreds, many thousands, are still suffering in the form of dyspepsia, constipation, "biliousness," etc., as effects of poisoning by lead from drinking-water, the cause not being known.

J. B. Harrison,¹ of London, whose experience with cases of plumbism can hardly be equalled, in regard to lead poisoning from drinking-water, says: "I am almost afraid of enumerating the cases which have fallen under my observation, lest, in relation of the truth, I lay myself open to the appearance of exaggeration." The cases he published are very numerous, some of which will be included in this collection.

Speaking of lead pipes, Dr. H. Osborn² says: "There is but little chance of improving our sanitary conditions in England if a wholesale system of poisoning be allowed to exist."

Such, then, are the opinions that echo in the annals of medical literature, and that have always found ample expression at the hands of many individuals.

HISTORICAL.

Lead pipes may be seen at this day among the ruins of the Coliseum and leading to the baths and fountains of Pompeii and Herculaneum.³ Aretæus, Ætius and Palladius have described lead colic and paralysis from lead with more or less minuteness, as arising from various sources.⁴ Palus Agineta was one of the first to distinctly describe lead colic, without, however, being aware of its true cause.⁵ The Roman architect, Vitruvius, who flourished in the time of Cæsar and Augustus, forbids the use of lead as conduits for water, because cerruse, he says, is formed on it, which is hurtful to the human body.⁶ Galen also condemns the use of lead pipes, because he was aware that water transmitted through them contracted a muddiness from the lead, and those who drank such water were

¹ On contamination of water by lead.

² *Medical Times*, Lond., Vol. XIX., p. 424.

³ Dr. Horsford, Boston Documents, No. 24, 1849.

⁴ Stille's Therapeutics and Materia Medica, 1868, Vol. I., p. 184.

⁵ Dr. G. Gregory, Theory and Practice of Physics, 1830.

⁶ De Architectura, Lib. VIII., C. VII. "Multo salubrior ex tubulis aqua, quam per fistulas: quod per plumbum videtur esse ideo vitiosa, quod ex eo cerrusa nascitur: hæc autem dicitur esse nocense corporibus humanis. Ita si quod ex eo procreatur id est vitiosum non est dubium quin ipsum quoque non sit salubre."

subject to dysentery.¹ The first author who drew the attention of the profession to the subject in England was Sir George Baker in 1767.² Early in this century Tanquer el des Planches had studied lead diseases most exhaustively, and to him is due the credit of defining precisely the nature of these diseases and their relation to one another. In 1834 Dr. Burton discovered the blue line on the gums of patients suffering from chronic lead poisoning and in 1840 announced it in a paper before the Medical and Chirurgical Society of London.³

THE ACTION OF WATER ON LEAD.

It has been maintained by Drs. Christison, Thompson, Horsford and others, that water acts on lead pipes only for the first few months after it is brought in contact with them, its further action being arrested by the formation of an impenetrable coating of lead carbonate and lead sulphate, whereby the danger is averted. This, however, has been disproved, as will be seen, by many cases of lead poisoning occurring from the use of water drawn through lead pipes that had been as many as twenty years in use, in consequence of the fact, no doubt that any excess of CO_2 in the water will dissolve this "protecting" coat, by which a more disastrous effect is produced. It is for the above-mentioned peculiarities that the question of the action of water on lead becomes of importance in these pages.

Dr. Lambe, of England, and later, Guyton-Morveau, of France, devoted their attention for a time to experimenting upon the action of water on lead. Their opinions illustrate the uncertainty which attended the earlier labors in the field of investigation. While the former believed that rain or snow water (particularly pure) does not corrode lead, the latter believed that distilled water, the purest of all waters, acts rapidly on it.⁴ That distilled water acts on lead in the presence of air, as was thus pointed out by Guyton-Morveau, is no longer a matter of doubt. This is well illustrated by the following experiment of Mr. Taylor:⁵ A piece of lead was placed in a vessel of recently distilled water, which had been boiled to expel the air, and the vessel kept *in vacuo* for a period of three days. At the end of this time the lead had undergone no change; the water was perfectly clear and free from any precipitate; while in another vessel similarly prepared, but which remained exposed to the air, the lead, especially at its upper part and edges, had acquired a crystalline incrustation of carbonate; and loose portions of that salt were floating in the water so as to render it turbid on agitation.

"Such is the action of distilled water on lead, in presence of air," says

¹ R. Christison, On Poisons, 1845; Dr. Horsford, Boston Documents; J. B. Harrison, Lond., 1852, etc.

² Dr. G. Gregory, Theory and Practice of Physics, 1830.

³ Trans. Medico-Chirurgical Society, Lond., Vol. III., 1840.

⁴ Proceedings Amer. Acad. of Arts and Sciences, 1848, p. 63.

⁵ Guy's Hospital Reports, 1838, p. 64.

Guyton-Morveau,¹ "that it can be made a test for the purity of the water, provided no acids be present in it." Captain Philip Yorke,² however, states that if a piece of lead be left in a tightly stoppered bottle filled with distilled water, after some time there will be found a slight amount of lead in solution, although the air had no access to the water.

The cause of the action of distilled water on lead, according to Professor B. Silliman, Jr.,³ of Yale College, is due to the presence of salts of nitrous acids. These salts are always present in ordinary distilled water, and their action gives rise to the common assertion that pure water dissolves lead very rapidly. This, he says, is not true, pure water does not act on lead at all; a statement which is corroborated by similar observations of Dr. Medlock.⁴

The part played by free O and CO₂ in the process of lead corrosion by water can be concisely and properly stated as follows: If distilled or any other pure water, such as rain or snow water, or the water of some rivers or springs, be brought in contact with lead in the presence of air, the water will be found to act upon the lead quite energetically, and it will more or less dissolve it. The chemical process involved being of considerable interest; an oxide of lead is first formed, which is slightly soluble in water. The solution then absorbs CO₂ from the air, the CO₂ precipitating the lead in great part from the water as a hydrated-oxy-carbonate, PbCO₃; (PbHO₂).

Of late years a theory has arisen concerning the protective properties of hard waters, due to the presence of neutral salts. Such are believed to be the effects of these salts that they would entirely prevent the corrosion of lead by the water, so as to render said water, being transmitted through lead pipes, absolutely safe for use. That this theory is not supported by actual facts, and does not bear the test of time, will be seen in Section IV. It is of considerable interest, however, to consider the observations and experiments which led to this theory, and, indeed, so far as the experiments are concerned, the effects of these salts cannot be said to be any different. It is the conclusion that is erroneous. For, whereas the experiment is made with a tumblerful of water and a stick of lead, weighing but a few grains, under a normal and constant pressure and temperature, and, perhaps, quietly put away in some dark corner, the comparison is made to similar things, but altogether in different proportions and under different and varying conditions. Thus, in actual practice, many feet of lead pipes and a vast quantity of water are involved, the pressure and temperature varying so frequently and so greatly, the amount of air, O and CO₂ in the water, being dependent upon so many conditions, obviously varies extremely; the extent of decomposition of animal and vegetable matter, which has a very impor-

¹ *Annales des Chimie*, Vol. 71 (1809), p. 198.

² *The London and Edinburgh Philosophical Magazine*.

³ Report on Mystic Pond, 1862.

⁴ Records of Pharmacy and Therapeutics, London, 1857, p. 34.

tant relation to the subject in question, also varying at times, it is evidently plain that this condition cannot, for a single moment, be likened to the experiments above referred to, and that conclusions drawn from such experiments are liable to ultimately prove detrimental. And, as will be seen, such conclusions have proven harmful.

It is often asserted, in treatises on the subject, that sulphates, phosphates and carbonates decrease the action of water on lead; that one part of sulphates in 5,000 parts of water interferes with, if not entirely prevents, said action; and that water, such as is supplied to the city of London, of twelve or thirteen degrees of hardness before, and three degrees after boiling, is absolutely without solutive power on lead. It is further maintained that in nearly all town waters the amount of carbonate of lime present is sufficient to prevent injurious action. Taylor states that if a water has as little saline matter as the 15000th part of the weight of the water, it is liable to become impregnated with lead. The Thames water, he says, contains about the 7000th part of its weight of saline matter, and he has kept in it, for nine years, a mass of lead exposing fifty-eight square inches of surface, without any carbonate being produced. Distilled water treated in like manner, during the same period, produced a very considerable quantity of hydrated oxide and carbonate of lead. A mixture of equal parts of distilled and river waters, says Mr. Taylor, had no action on lead; consequently a preservative effect existed where the proportion of saline matter could not have been greater than the 14000th part. The Edinburgh water, according to R. Christison, contains about the 12000th part of its weight of saline matter; "and it has but a feeble action on lead." That used at Tunbridge some years since, contained only the 38000th part of saline matter. A quantity so small, that with the knowledge of these facts, it is not surprising that the water should have become contaminated with lead, and have given rise to lead colic among the inhabitants.

Guyton-Morveau was one of the first experimentalists on this subject. Having found that distilled water corroded lead he proceeded to inquire why no change of this kind takes place in some natural waters, and being aware that most spring and river waters differ from that which has been distilled chiefly in containing sulphate of lime and muriate of soda, he tried a solution of each of these salts, and discovered that the addition of a certain quantity of either to distilled water takes away from it the power of attacking lead. Professor Christison¹ has extended these researches and found that carbonates, hydriodates, phosphates, nitrates, acetates, tartrates and arseniates also possess the power of preventing the corrosion of lead by water. The degree of this preservative property differs much with different salts. The acetate of soda, he says, is but an imperfect preventive when dissolved in the proportion of a hundredth part of the water; white crystals are formed, and the lead loses about a fourth of what is lost in distilled water during the same time. Arseniate of soda is, on the con-

¹ On Poisons, 1845, p. 403.

trary, a complete preservative when dissolved in the proportion of a 12000th. Phosphate of soda and hydriodate of potash, he claims, are almost effectual preservatives in the proportion of a 30000th part. Nitrate of potash in the proportion of $\frac{1}{100}$ prevents the action of the water almost entirely, but if the proportion be diminished to $\frac{1}{160}$ the loss sustained by the lead is fully a third of the loss in distilled water. Muriate of soda is a preventive when it is $\frac{1}{2000}$ in solution, and sulphate of lime when $\frac{1}{4000}$ in solution. When it is attempted to ascertain, he adds, the relative preserving power of the neutral salts, it will appear that those whose acid forms a soluble salt with the lead are the least energetic. Thus the protecting powers of acetate of soda, nitrate of potash, muriate of soda, sulphate of lime, arseniate of soda, and phosphate of soda, are inversely as the solubility of the acetate, nitrate, muriate, sulphate, arseniate and phosphate of lead.

As a result of a number of experiments Dr. T. Grace Galvert¹ states that after leaving the city water of Manchester (Eng.) in the pipes for six weeks, its corrosive action on the lead apparently ceases, but if the water again be left in the pipes for twelve hours it will be found to contain $\frac{2}{10}$ of a grain of lead per gallon.

The influence of pressure and temperature on the action of water on lead was investigated by Dr. Sinclair White,² and he found that the greater the pressure the greater amount of lead is taken up, and the greater the temperature the greater the solvency. Dr. Hayes³ also observed that elevation of temperature increases the quantity of lead dissolved in a given time. From this it may be inferred that any condition increasing the temperature of the water, as in well-heated rooms, laundries, shops, etc., also increases the danger of lead poisoning.

THE UNSAFETY OF LEAD PIPES, OPINIONS OF CHEMISTS AND PHYSICIANS, PLUMBISM SIMULATING OTHER DISEASES.

To determine to what extent the "insoluble" coats of lead carbonate and lead sulphate are protective, we need but look at the results obtained with hard water and lead pipes that were several years in use, and in all cases it will be found that the facts of to-day are in opposition to the prophecy of twenty, or more, years ago. Thus the Croton water, of New York, has been thought to be a safe water on account of its hardness, but now I can point to some cases of lead poisoning having occurred from the use of that water (vide Cases 58-62). These are very few, due to the fact that the physicians of that city have never thought of the possibility of lead poisoning from Croton water, and have therefore left many cases go undiagnosed. Analysis of Croton water by Dr. Dana, in 1846, drawn

¹ *Dingler's Polytechnisches Journal*, Vol. 162, p. 220.

² *N. Y. Medical Journal*, September 21, 1889; *Medical News*, Philadelphia, April 2, 1892.

³ Report of the Consulting Physicians, Boston, 1848, p. 24.

from a lead service-pipe which had been in use from the date of introduction of that water, revealed lead in solution. Dr. James R. Chilton, of New York, has repeatedly found lead in Croton water drawn through lead pipes.¹

But a few years ago the Cochituate water has been pronounced a safe water to be drawn through lead pipes, to-day all evidence points against it. When the introduction of Cochituate water into Boston was under discussion, Professor Horsford, of Cambridge, made a series of experiments with regard to the action of this, as well as of other waters, upon lead.² He concluded that this water may be safely transmitted through lead pipes, and may be used for drinking and culinary purposes with impunity, for the following reasons :

"In experiments with Croton, Fairmount, Jamaica, and Cochituate waters made with lead, the latter was found to act as favorably as the other waters." Also that "a coat forms upon lead in Cochituate, as in the other waters, above mentioned, which for all practical purposes becomes, in process of time, impermeable to and insoluble in the water in which it occurs." The water being thus favored, was introduced into Boston, lead pipes being used to convey it.

Cases of lead poisoning through the Cochituate water are now known, however, to be numerous (vide Cases 63-69), and, undoubtedly, will soon be more easily recognized, and therefore the number so poisoned will increase.

It can now be demonstrated that waters, which in the laboratory seemed to corrode lead but slightly, really act very violently on the pipes through which they are conveyed. Mr. Wm. R. Nichols, of the Massachusetts Institute of Technology, states that he has examined many samples of Cochituate water drawn from pipes, and has never failed to find indications of lead. The following quantitative determinations were made by him:³

No. 1. Water dipped from the upper part of the Cochituate Lake in a glass jar, August 31, 1870, 1,000 c. c., failed to give indications of lead.

No. 2. Water from one of the drinking-fountains on the Boston common, July 20th; 100,000 parts of this water contained 0.0415 parts of metallic lead, equivalent to 0.0242 grains to the U. S. gallon of 231 cubic inches.

No. 3. Water from private residence, No. 137 Walnut Ave., July 19th. The water is delivered through one hundred feet or more of tin-lined pipe, and then through ten or twelve feet of lead pipe. The pipes have been in use six months, 100,000 parts of the water contained 0.0342 parts of metallic lead, equivalent to 0.029 grains to the gallon.

No. 4. Water from hot water pipes from same dwelling house as No. 3, July 21. This water passed through forty additional feet of lead pipe, through a lead-lined tank, and through an ordinary copper boiler; 100,000

¹ *N. Y. Journal of Medicine*, Vol. VI., 1851.

² Boston Documents, 1848, Nos. 18 and 23; *Proceedings American Academy of Arts and Sciences*, Vol. II., p. 99.

³ Report of State Board of Health of Mass., 1871.

parts of the water gave 0.191 parts of metallic lead, equivalent to 0.112 grains to the gallon.

No. 5. Water from the Chemical Laboratory of the Massachusetts Institute of Technology, drawn June 25th, early in the morning, the water standing some fourteen hours in the lead pipe, which is about 150 feet long, and has been in use several years; 100,000 parts contained 0.098 parts of metallic lead, equivalent to 0.057 grains to the gallon.

No. 6. Water from the same pipe as No. 5, after running out enough to clear the pipe; 100,000 parts of it gave 0.0307 parts of metallic lead, equivalent to 0.0179 grains to the gallon.

No. 7. Water from private residence No. 8 Sawyer Street, September 20th. The water had been let into the pipes only four days previously, and, at the time the sample was taken, had remained in the pipes three or four hours. The pipe is of lead and is fifty feet in length; 100,000 parts gave 0.073 parts of metallic lead, equivalent to 0.0427 grains to the gallon.

No. 8. Water from private residence, Kendal Street, September 26. This water was let into the pipes some four months since, and none had ever been drawn previous to this time, 100,000 parts of it gave 0.0937 parts of metallic lead, equivalent to 0.0547 grains to the gallon.

In view of the foregoing quantitative determinations, and many observations on various samples of lead pipes which have been in actual service, Mr. Nichols concludes that Cochituate water, which has passed through lead pipes, is never absolutely free from lead. Dr. Hayes, in his report to the Board of Consulting Physicians of Boston, on the action of some lake and river waters on lead, states that metallic lead, in a globule as large as an ordinary pinhead, was obtained from one quart of Cochituate water after 24 hours of exposure to lead. Dr. Webster also found the Cochituate water act considerably on lead.¹ Dr. E. M. Greene has examined the Cochituate water, drawn through several faucets of different dwellings in Boston, as also of the dwellings of Cases 63-69, and he found lead in every case.²

In regard to Professor Horsford's second argument, namely, the protection afforded by the insoluble coats formed in the pipes, considerable has already been said. This, however, is a very important subject to discuss, inasmuch as it is the foundation upon which those who favor the use of lead pipes based their opinions, and hence some more space must be allotted to it.

Thus Professor Christison frankly acknowledges³ that he has been misled by his method of experimentation, and where he predicted that the water would be safe for use, as in the Dumfriesshire family, the facts proved to be altogether the opposite.

Dr. Horsford states⁴ that the nitrates and chlorides promote the solu-

¹ Boston Water Supply Pamphlets, 1845-50.

² *Boston Medical and Surgical Journal*, Nov. 28, 1889.

³ *Trans. Royal Society of Edinburgh*, 1842, p. 266.

⁴ *Proc. Amer. Acad.*, 1848, p. 98.

tion of some coats formed on lead. It need only be added that CO_2 in the water also dissolves the coating of lead carbonate (for example of which see Cases 135–137), and does it not appear plain that these “insoluble” coats can not serve as a protective to any appreciable extent? And when we reflect that these solving agents can be produced by decomposition of animal or vegetable matter, and can, therefore, at any time be produced or deposited in the water, and that, as aforesaid, increase of temperature increases the solvency of the lead salts, it becomes clear that such “insoluble” coats not only fail to act as a protective, but that they multiply the danger to lead poisoning, since they consist of an enormous amount of lead salts lying in wait for an opportunity to be dissolved and thus consumed.

The London water, being hard, was considered safe, as it was said it had no action on lead at all. In 1843, it was discovered that the dogs of Her Majesty’s Kennel sickened and died in consequence of drinking water that flowed through a lead tube. This led to a vigorous action, although half of the inhabitants of that great metropolis might have been suffering from the same cause.¹ Again in 1859 the great lead-and-water question was the subject of much public discussion in the columns of the *London Times*. The result was a general feeling that the public safety lay in the abolition of lead in the construction of cisterns and pipes for water supply. Some writers had gone so far as to recommend a prohibition by Government of such uses of lead.²

Dr. Hassall, the Analytical Commissioner of the London *Lancet*, in relation to the Thames and other waters, says, that from the number of samples of water, which he has received, containing lead, he is induced to believe that the metal is more frequently introduced into the system in this way than is commonly suspected. He further adds, so many well-ascertained cases of lead poisoning, arising from the use of water contaminated with lead, have occurred, that the use of lead for the storage and conveyance of water ought to be entirely discarded.³

Dr. W. Lauder Lindsay⁴ states: It may admit of a doubt whether the opinion of Dr. Lambe, of Warwick, that *all* natural waters must be held to act upon lead, which therefore, is at *all* times and under *all* circumstances, a dangerous metal to have in contact with drinking-water, is not safer, so far as the public health is concerned, than the more modern idea that a small quantity of certain neutral salts acts invariably to prevent this action on lead. He has no desire to create unnecessary alarm, but he has a desire, he says, that chemistry should be more creditably represented in its relation to sanitary science, than it at present is in reference to the action of drinking-water on lead. Again he says: ⁵ Cases of lead poisoning on the

¹ *Boston Medical and Surgical Journal*, May 24, 1843.

² *London Medical Times and Gazette*, October 29, 1864; *American Journal of Medical Sciences*, January, 1865.

³ *American Journal of Medical Sciences*, Jan., 1865.

⁴ *The Edinburgh New Philosophical Journal*, N. S., Vol. IX., p. 245.

⁵ *Ibid.*, Vol. X., p. 22.

small scale, or rather in a minor degree, are constantly occurring in all the large towns from the plumbeous impregnation of drinking-water. The medical man is often extremely puzzled to account for certain anomalous symptoms in his patients; and he puzzles himself in vain, until he at last bethinks himself of the assistance of the chemist who discovers lead in the drinking-water used. On talking the matter over, he says, with medical men in London and elsewhere, he finds the suspicion strong, though they are seldom in the position to prove indubitably the correctness of their suspicion, that many obscure cases of colic and other intestinal affections, as well as paralysis of the nature of lead palsy, sometimes going on to a fatal issue, are really due to plumbeous impregnation of drinking-water.

In 1858 Dr. Lindsay¹ laid before the British Association the records of a series of experiments and observations made by him during the previous year. His main or general results were tabulated in the following series of propositions:

1. Under certain circumstances pure and soft waters do not act upon lead.

2. Hard or impure waters, sometimes containing abundance of the very salts which are generally supposed to be most preservative or protective, do act on lead, and with same rapidity and efficiency as pure or soft waters. This was illustrated by the destruction of lead cisterns in the Murray-Royal Institution (a retreat for the insane of the middle classes) near Perth, of which Dr. Lindsay is the physician.

3. We are not in possession of any satisfactory information about the causes of the varying action, under different circumstances, of the water on lead; information that may be of any practical value in assisting either predicting or preventing lead-erosion or lead-contamination.

4. Experiments on the small scale, and for short periods are most fallacious, and frequently dangerous in regard to the conclusions thence to be drawn.

5. Contamination of water, both hard and soft, impure and pure, by lead is, in all parts of the kingdom, and under every variety of circumstances, the cause or source of various obscure diseases of man (and also, doubtless, of the lower animals), especially of the nature of dyspepsia and colic.

6. So uncertain is the action of water on lead, so impossible is it to predicate the nature or extent of that action under the varying mechanical and chemical conditions of water supply of houses and towns, so difficult is it to prevent the possible dangers, so numerous and excellent are the substitutes that may be provided for lead in the construction of cisterns and pipes, that it is desirable henceforth to abolish the use of lead as a means for the conveyance or storage of waters.

The late Dr. Dundas Thomson, President of the Metropolitan Associa-

¹ *American Journal of Medical Sciences*, 1868, p. 266.

tion of Medical Officers of Health, who had for many years given, as a chemist, great attention to the water supply says,¹ "It is impossible too strongly to condemn the use of lead pipes and cisterns. They should never be used for conducting or retaining water for drinking or culinary purposes."

Professor B. Silliman, Jr., of Yale College, says: "Considering the deadly nature of lead poison, and the fact that so many natural waters dissolve this metal, it is certainly the course of safety to avoid, as far as possible, the use of lead pipes for conveying water which is to be used for drinking."² Again he says:³ "Thus pure water cannot be safely transmitted for the reason that it will become contaminated with lead, while the impure waters, which do not act so readily on lead, are by themselves not fit to be used for drinking and culinary purposes."

Drs. B. W. Richardson,⁴ Thomson⁵ and Fairclough⁶ are among the many others that oppose the use of lead pipes for the conveyance of drinking-water, the latter believing that much of the anemia of town people is due to drinking water containing small quantities of lead.

* * * * *

Of late it has been discovered that many cases of lead poisoning so simulated various other diseases, especially those of the nervous system, as to be mistaken for them; the true diagnosis being established only by a chemical examination of the urine. The characteristic symptoms, such as the blue line on the gums, colic, constipation and emaciation, so dependent upon by the general physician, being absent, it is easy to see how such cases could be mistaken for other affections. I need not impress here the disastrous effects of not diagnosing and not properly treating lead-poisoning cases; sufficient has already been said. Only too frequently are such cases allowed to pass unnoticed. The following reports, together with what has been alluded to, may show that there are many hundreds of cases of lead poisoning, whether produced by drinking-water, or in some other way entirely unrecognized.

Dr. J. J. Mulheron, in his paper read before the Michigan State Medical Society, May, 1880,⁷ states that lead affections are often confounded with rheumatism, and are treated without success until the patient goes to some sulphur spring and is cured. He cites several cases to support his statement.

Dr. S. G. Weber, of Boston, in his paper read before the American Neurological Association,⁸ June, 1882, relates several cases, the symptoms

¹ *The American Journal of Medical Sciences*, 1865, pp. 265, 266.

² October, 1845, Boston City Documents on Water, 1844-45.

³ B. Silliman, Reports, etc., Vol. I., 1848-65. Quebec waters.

⁴ *Medical Times and Gazette*, London, Oct. 29, 1864.

⁵ *Medical Press and Circular*, London, 1886, p. 73.

⁶ *N. Y. Medical Journal*, Sept. 21, 1889.

⁷ *The Medical Record*, 1880, p. 734.

⁸ *Medical Record*, 1882, p. 20.

of which pointed strongly to myelitis, so that when they were first admitted to the hospital the diagnosis of myelitis was made. An examination of their urine revealed the presence of lead. The blue line on the gums was absent in most cases, and in only one case was the source of lead ascertained.

In a paper read before the same association¹ the following year, Dr. J. J. Putnam, of Boston, reports eight cases in which the examination of the urine showed the presence of lead, while the symptoms and clinical history were not such as are usually considered characteristic of lead poisoning; in fact simulated other types of disease. He also quotes a case reported by Dr. F. Minot (vide *Boston Medical and Surgical Journal*, 1881), in which the symptoms of lateral sclerosis were present to some degree. Lead was twice found in the urine. The patient improved materially under the use of iodide of potassium.

In none of the eight cases reported by Dr. Putnam, was the blue line on the gums to be seen. All characteristic symptoms, *i. e.*, colic, emaciation, atrophic paralysis and cerebral symptoms were absent, the diagnosis being established only through the examination of the urine after the administration for a few days of iodide of potassium.²

Dr. James H. Lloyd, of the nervous and insane departments of the Philadelphia Hospital, has noticed that locomotor ataxia is very frequently simulated by cases of lead poisoning, and one can hardly be distinguished from the other. He also quotes several cases of the kind.³

(*To be continued.*)

A Test for Human Semen. Florence devised the following method of identifying human semen, even when two and a-half years old. His reagent consists of a solution of 1.65 grammes of potassium iodide and 2.54 grammes of iodine dissolved in 30 c. c. of distilled water. When a drop of the liquid obtained by moistening a seminal stain is placed side by side with a drop of this solution on a slide, large numbers of peculiar brownish-red pointed crystals appear. They are rhomboidal and closely resemble hemin crystals. Another method is that of Whitney—A drop of fluid obtained from the moistened stain is evaporated and fixed by a flame. The same is stained with eosin and methyl green and mounted. At the base of the head of the spermatozoa is a hemispherical portion which stains a deep green, while the anterior part and tail stain red. This serves at once to identify them, as there is no other oval spore or cell which has an eccentric hemispherical nucleus. He furthermore claims that the test proves them to be human, as in no other animal is there a deep staining.

¹*Ibid.*, June 30, 1883.

²All the chemical parts of the investigation were performed by Professor E. S. Wood, of the Harvard Medical School.

³*Medical News*, Phila., April 2, 1892.

TALKS TO GENERAL PRACTITIONERS.

A polyclinic in print embodying simple lessons in so much of the newer methods and procedures in the specialties as it is important and practicable to teach in this way to physicians generally; and the occasional rehearsal of old but neglected truths.

DIAGNOSIS OF GONORRHEA (GONORRHEAL URETHRITIS).

BY J. D. THOMAS, M.D.,

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THE diagnosis of an acute case of gonorrhea is usually a simple matter, more especially if it is a first attack. There is a history of intercourse, that is probably impure, followed in a few days (three to ten) by a mucopurulent, then a purulent discharge, the discharge being preceded by an itching, then a burning at the meatus with an unusual desire for intercourse. If the urethritis is of a severe type, there is a marked swelling of the urethral mucous membrane; the stream during urination is small, causing excruciating pain from the peripheral pressure produced by the expulsive efforts of the bladder muscles. There may be in such cases considerable edema of the prepuce and a "porkiness" of the entire penis due to lymphatic involvement. The discharge occasionally has a greenish tinge from slight admixture with blood. Chordee is another accompaniment, causing much discomfort. When the more acute symptoms subside, this complication disappears, but if there is an attempt at organization of the inflammatory product effused into the corpus spongiosum the chordee is more or less persistent.

In milder cases the symptoms are much modified, and as long as the deep urethra (membranous and prostatic portions) remains uninvolved very little complaint is made, the principal discomfort being the filthy condition engendered by the discharge.

In very many cases, sooner or later after the first week, the disease invades the deep urethra. This is recognized by a desire upon the part of the patient to urinate often—the desire being imperative. There is straining at the end of (terminal) urination, and this bearing down is sometimes accompanied by the passage of a few drops of blood, the result of capillary bruising. If these symptoms are very marked, it is well to bear in mind the possibility of a prostatitis which may be excluded by palpation with the point of the finger introduced into the rectum. In mild cases of deep urethritis the only additional symptom is the frequent desire to uri-

nate, but the desire is not imperative, for many of the patients can retain the urine for some time after the desire is first experienced.

The two-glass test is quite reliable when the deep urethra is acutely inflamed, for at this time the inflammatory débris is abundant and passes backward into the bladder, and gives the urine voided in the second glass that opaque, lumpy appearance so characteristic. Whilst penning these lines a patient presents himself who has had a discharge for eight days and complains to-day, for the first time, of a desire to "pass water every half hour." The two-glass test in his case is very marked. This opacity must not be confounded with the opacity of phosphatic urine, which clears up on the addition of a few drops of acetic or nitric acid. The two-glass test is not to be relied upon in the later stages, for at this time the secretion is small in amount and is flushed away with the first gush of urine.

When a patient has had one or more gonorrheas (pluri- or multigonorrheas) it is not always an easy matter to say positively that the present fresh discharge is due to a new infection. Many so-called new claps are not veritable new claps but are of that class called "bastard." A man who has once had a gonorrhea has, as a result, a permanently damaged urethra. The infectious element may, of course, have disappeared, but there remain occluded follicles, indurated patches, cicatricial areas, hyperesthesia, neurasthesia, etc. One or more of these sequelæ may keep up an intermittent discharge, or start up a discharge with the least excitement. It is said that gout, rheumatism, urinary crystals, menstrual fluid, etc., will produce a *de novo* urethritis in some men. In my patients they do not. In my experience a discharge from the meatus of a gouty patient means the same as a discharge following a debauch or excessive venery. It means that the patient has had, at some time in the past, a urethritis due to the gonococcus or (exceptionally) a traumatism. In a healthy urethra none of these causes will produce a discharge. A sexually vigorous man consulted me in behalf of his wife who remained sterile. He stated that for the two years since his marriage he had not passed one day without indulging in coitus. The menstrual fluid did not injure his urethra; he had never had a gonorrhea. Leucorrhœa or a non-specific purulent discharge from the vagina will not produce a discharge in a man with a sound urethra. I had a female patient under my care who had a chronic abscess in the neighborhood of the uterus, for which she declined having anything radically done, which discharged into the vagina continuously; but this discharge did not produce a urethritis in the husband. In these cases our diagnosis again depends upon the history elicited. If the discharge is rather free and follows a suspicious cohabiting, the diagnosis of gonorrhea is justifiable. There is, however, the possibility of the presence of the gonococcus in the urethra from the previous gonorrhea. If confrontation could be practiced the diagnosis would be simplified. In cases where the amount of discharge is small, if the suspicious intercourse was preceded by, or accompanied, a debauch, the diagnosis of simple urethritis

would probably be correct. Excessive intercourse alone may start up a non-gonorrheal discharge. A patient, 44 years old, married for a number of years, had a gonorrhea 22 years ago which lasted for one year. Under an unusual temptation he indulged in coitus three times during the space of half an hour. In two days afterwards, very much frightened, he consulted me on account of a discharge. There was very little disturbance, the discharge was muco-purulent and small in amount. My diagnosis was simple urethritis, which was confirmed by the microscope. The use of an astringent injection dried up the secretion in three days. An examination then made demonstrated the presence of a stricture, three inches from the meatus, for which he is now being treated.

The possession of a microscope with a $\frac{1}{12}$ -inch oil-emersion lens is necessary to make a quick and correct diagnosis.

DIAGNOSIS AND TREATMENT OF INTERNAL PELVIC HEMORRHAGE.

BY EDWARD E. MONTGOMERY, M.D.,

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IN our last talk we discussed the subject of external hemorrhage from the genital tract. It seems a fitting corollary and an advance in this discussion to take up the subject of internal hemorrhage. Internal hemorrhage may be produced by engorgement of the pelvic viscera resulting in ovarian apoplexy or ovarian hematoma or tubal hemorrhage. Rupture of varicose veins, causing an internal hemorrhage or hematocele, either free or a circumscribed collection beneath the peritoneum in the cellular tissue. The term hematocele, as now employed, covers both these conditions, as the internal hemorrhage, if the patient survives, soon produces sufficient irritation of the peritoneum to result in its being encysted and confined within the most dependent portion of the peritoneal cavity. The most frequent cause of internal hemorrhage from the genital tract is tubal gestation. This may result in the escape of the fetal sac and the discharge of blood into the peritoneal cavity through the abdominal end of the tube, known as tubal abortion, or the sac, at any time between the third and twelfth week may rupture, permitting its partial or complete escape into the peritoneal cavity and the discharge of a large quantity of blood. This bleeding may be so severe as to lead to the death of the patient immediately from shock, or within twenty-four hours. The rupture more fortunately, however, may take place through that portion of the tube uncovered by peritoneum and into the folds of the broad ligament; where the hemorrhage is necessarily circumscribed by the space into which it takes place. The clot formed

compresses the bleeding vessel and leads to its arrest before fatal hemorrhage occurs. The pressure, however, may be so great as to lead to a secondary rupture and the escape of the contents into the peritoneal cavity, when bleeding may continue and death occur. Such patients may have no warning, the woman supposing herself to be pregnant normally, until there is a sudden agonizing pain, not unfrequently so severe as to lead to unconsciousness. She falls in a swoon, recovering from this to pass into others, and is bathed with a cold, clammy perspiration, the face is pale, the countenance pinched and anxious, the breathing rapid, the pulse feeble and possibly imperceptible. Dissolution may be imminent. The examination over the abdomen reveals nothing. Blood in the peritoneal cavity is not recognizable by bimanual palpation. It is only after it has become clotted and encysted that we recognize its presence. When this occurs the great danger has passed. A patient presenting such symptoms would always awaken in the mind of the physician the suspicion of an ectopic gestation, and particularly if this is associated with a bloody discharge from the uterus. The patient probably believes that an abortion is beginning. Such a case requires most careful and judicious management; an open vessel is bleeding in the abdominal cavity. To combat the faintness and depression by active stimulation, hypodermic injections of strychnine, and other measures to increase the heart's action is to drive out possibly a clot or a plug that is forming in the bleeding vessel and increase the amount of blood the patient loses. The faintness, the debility, is Nature's method for arresting the hemorrhage. If the patient can be tided over the time with a feeble pulse, without stimulation of the circulation, there is a possibility that a clot may form and the hemorrhage be arrested. Until measures can be taken to secure the bleeding vessel, the patient should be kept perfectly quiet, should not be permitted to move a muscle, should have an ice bag applied over the abdomen, and ice suppositories introduced into the rectum. The pillow should be removed from beneath the head.

If a patient has been very greatly depressed and an operation is decided upon, as soon as the preparation has been accomplished, the patient should be given a hypodermic injection of strychnine, and the loss of blood supplied by intravenous injections of salt solution which may be carried on while the abdomen is being opened. The bleeding vessel secured, the abdominal cavity is quickly irrigated, the clotted portions of the blood bailed out with the hand, not being particularly careful to remove all the fluid, whether blood or salt solution. Saline irrigation used hot is almost as efficient as intravenous injection, and with a large amount of it in the abdominal cavity, the patient will be able to absorb or take up the portion of blood that may remain. The operation consequently should be an expeditious one, rapidly securing the bleeding vessel; not to thoroughly cleanse the peritoneal cavity; dipping out the clotted blood with the hand, irrigation with salt solution; the wound closed and dressed, patient placed in bed with the limbs bandaged, and the pelvis elevated, in order to give the

heart as little work as possible in supplying with blood the vital centers. In patients where the blood has escaped for some time, the condition becomes chronic, operation is not always necessary, as under judicious management the blood will be absorbed and the whole collection disappear. The blood collection, of course, first undergoes a process of being encysted, then organization, and finally the collection is removed. This process, however, requires a considerable length of time. It may be interrupted by various accidents, increasing the possibility of infection of the collection, so that while operation as we have said is unnecessary, it is still advisable, for the reason that it removes the possibility of accidents, it facilitates the removal of the collection, relieves Nature of the necessity for its absorption and frees the patient from the thickening and exudations with more or less of fixation of the organs, which are likely to result. With the change which takes place a week or ten days after hemorrhage has occurred, the vessel has been sealed up and it is unnecessary that the peritoneal cavity should be opened by an abdominal incision. Indeed, where the blood is encysted in Douglas pouch it seems preferable to respect the barriers Nature has arranged and open through the post-cervical cul-de-sac, making a free incision, evacuating the contents of the pelvis, irrigating the cavity, scraping out with the finger the adherent clots and packing with iodoform gauze, thus making sure of retaining a good free opening. This procedure permits the evacuation of the collection without the more serious abdominal incision, even permits the turning down, ligation and removal of the tube or fetal sac. This procedure is particularly valuable in cases of circumscribed hematocele, where the collection has been poured out into the broad ligament. Here it may be reached by a vaginal incision without opening into the peritoneal cavity and with much less danger and discomfort to the patient than would result from an abdominal incision. This plan of procedure, however, by the vaginal route is only applicable to those cases in which the collection is old, having given time for hemorrhage to be arrested and the bleeding vessel occluded. In recent hemorrhage where we have reason to believe that the vessel is still bleeding or likely to bleed, the abdominal incision should be made to permit the inspection of the cavity and the certain control of the bleeding vessel.

GENERAL CONSIDERATION OF MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

BY D. BRADEN KYLE, M.D.,

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BEFORE taking up the subject of mucous membrane lesions, in order to make clear reflected and dependent lesions, it is necessary to thoroughly un-

derstand the normal histology and physiology of mucous membranes in general.

The mucous membrane of the respiratory tract and in fact all mucous membranes are dependent structures and are influenced directly by local irritants, or the local irritation may be due to some constitutional diathesis. These facts then necessitate a thorough knowledge, not only of the histology and pathology of the mucous membrane, as well as of the adjacent and allied structures, but also of remote organs which through their deficient or perverted function may produce secondary lesions of the mucous membrane. The rational treatment of diseases of the upper respiratory tract then involves a knowledge not only of special structures, but of the entire body, the peculiar interrelation of each individual part and especially the peculiarities of individuals.

Mucous membranes, as has been said, are dependent structures, that is, they are supported entirely by underlying connective tissue, on the character of which the membrane's function and its resistance to disease largely depend. If this structure be fixed, as is the case in the bony frame-work of the nose, when the mucous membrane is engorged or inflamed, the distension must necessarily be in one direction, *i. e.*, toward the cavity, thus necessarily lessening its lumen. This is true of almost the entire upper respiratory tract, as the membrane is backed up either by fixed bony or firm cartilaginous frame-work.

Inflammatory processes of the mucous membranes rapidly pass into the second or exudative stage. This is due to the fact that the blood vessel has very little connective tissue support, allowing rapid distension and early exudation. Any interference with the systemic circulation, either arterial or venous, in which the blood is either actively or passively in excess in the tissue, may bring about almost the same clinical phenomena as observed in acute inflammation. The prognosis and treatment would be vastly different in the two conditions. In other words, the lesions involving the mucous membrane of the upper respiratory tract may be divided into two general varieties, primary and secondary. By the first is meant such lesions as are situated at the site of the inflammatory process and are directly associated etiological factors. And under the second variety are grouped those processes which are forced on the tissue, the lesion being elsewhere. For example, a lesion of the right side of the heart causing passive pulmonary congestion, thereby slowing general venous return, will produce a cyanotic condition of the mucous membrane. It is well known that mucous membranes when subjected to repeated engorgement tend to remain passive or distended owing to the fact of their lax structure.

A similar process can be brought about by any systemic lesion such as interstitial nephritis and contracted kidney, hob-nail liver, or any organic involvement by which the general circulation is obstructed, and the blood dammed back on the mucous membrane surface where the continued intravascular pressure produces atrophic changes in the connective tissue and essential structures.

Due to faulty elimination either through the intestinal, urinary or respiratory tract irritating material will be found in the blood and the mucous membrane being a dependent and sensitive structure will very soon show the effects of such irritants. This is especially illustrated in the gouty and rheumatic diatheses. In such cases how useless it would be to direct the remedial agents toward the local manifestation without first correcting faulty elimination.

(To be continued.)

*PRACTICAL METHODS OF DETERMINING THE
BOUNDARIES OF THE STOMACH AND THE
STATE OF ITS MOTOR FUNCTION WITH-
OUT THE USE OF THE TUBE.*

BY BOARDMAN REED, M.D.

DILATED, as well as displaced, stomachs and intestines are exceedingly common especially in women. Gastric dilatation always impairs the health more or less, and even displacements are apt to cause obstinate constipation and troublesome forms of indigestion. They are often associated with a downward displacement of the right kidney if not of both, and with more or less serious nervous derangements, such as insomnia, nervous depression, cardiac palpitation, etc. None of the widely prevalent diseases are so often overlooked by otherwise skillful practitioners, and the reason is, that until within a few years little or no instruction was given as to the diagnosis of them in the medical schools of this country.

Deficient muscular power in the stomach walls is another very important pathologic state which always precedes the idiopathic forms of dilatation and generally results sooner or later when there is a marked sagging downward of the organ.

Normally the stomach should be in contact with the diaphragm above and to the left, thus in close relation with the heart and left lung. Below, its lower border, where in contact with the anterior wall of the abdomen, should be two inches at least above the level of the umbilicus. In what Ewald calls megalogastria, or hypertrophy of the stomach, the organ may even extend below the navel without apparent impairment of its functions, because its muscular power remains good, but such a condition cannot be called normal. In perfectly healthy young persons the lower border is not usually below the middle point between the ensiform cartilage and the navel.

Mapping out the boundaries of the stomach will suffice to establish the diagnosis of gastric enlargement or displacement, and then by percussion

and clapotement (that is, eliciting a splashing sound) even the motor power of the stomach can be approximately determined.

The diagnosis of these various morbid conditions can be made with a great degree of accuracy by the aid of various intragastric instruments, but I shall describe to you here a simpler method which will afford practically correct results in nearly all cases.

For this you will require no instruments except a good amplifying stethoscope, together with a percussor and pleximeter, and the last two may be dispensed with by those who are well-trained in delicate percussion. The patient can be examined best when the stomach is empty at first, and it will simplify matters to have the colon also emptied beforehand.

In a thorough examination of the abdomen you will always begin with a careful inspection of the region uncovered. This will often afford valuable information as to tumors, deformities, fat deposits, tenseness or laxity of the abdominal muscles, etc. For the purposes now under discussion, a glance at the abdomen, especially with the patient standing, will frequently alone raise a strong presumption that there is a splanchnoptosis or falling of the abdominal organs generally. When there is a marked bulging forward below the navel with unusual flatness or depression of the parts above, you will be almost sure to find that there has been, at least, either an enlargement or dropping of the stomach (gastroptosis) and in consequence a pushing downward of the transverse colon with usually a large part of the small intestines. Yet the stomach may be dilated or displaced without there being any such visible changes.

Next, with the patient lying on a couch, the head and shoulders well raised and the knees moderately flexed, you will proceed to practice clapotement and percussion. Placing a pillow or other support under the knees will assist in relaxing the abdominal muscles. When these are still tense, as often happens in nervous persons, knead the abdomen very gently with well warmed hands for a few minutes. Clapotement presupposes fluid in the stomach and very often fluid will be found there when the patient first comes for examination. While the patient is still recumbent tap lightly over the upper abdomen with the finger tips held perpendicularly to it, in order to elicit a splash, provided fluid be present. If you succeed in getting the splashing sound more than three hours after a light, or than six hours after a full, meal, this would not only point to slow digestion or deficient motility, but would also afford indications approximately as to the position of the greater curvature or lower boundary of the stomach, and thus avoid the necessity of careful percussion over so large an area. Failing to obtain a splash may signify (1) a very thick abdominal wall because of excessive adipose tissue; (2) normally strong muscular power or resiliency in the stomach walls; or (3) the absence of fluid from the stomach. But do not ask the patient to drink water till later. It is better to have the stomach empty when you begin percussion if possible.

With the patient recumbent, percuss very lightly from above downward

in the left parasternal line, or in several lines between the median and the nipple line, noting first the level where at the right the cardiac dullness changes to the modified dullness of the left lobe of the liver overlying the stomach, at the left to the tympanitic sound heard immediately over the stomach, whenever this contains much gas. Then, proceeding on downward, note the line where the low pitched tympanitic sound of the stomach changes to the similar but higher pitched sound over the transverse colon. You may possibly be able to determine again where this last changes to the still higher pitched tympany over the small intestines, though very often there is no appreciable difference in the percussion notes over the different portions of the intestines.

When the stomach contains considerable gas, this single procedure is sometimes sufficient for the expert, though it is well to confirm the results by percussion with the patient in a standing position before and after drinking one or two glasses of water in the manner to be described further on. If there be little or no gas in the stomach with a resulting lack of tympanitic resonance, inflate it artificially by administering a teaspoonful of bicarbonate of soda dissolved in a glass of water and immediately afterward forty drops of dilute HCl, or half a teaspoonful of tartaric acid in half a glass of water. Smaller quantities of these may often suffice, and in persons with very large stomachs greater quantities may be necessary.

More delicate and precise results can be obtained by auscultatory percussion and auscultatory friction, with the help of a good phonendoscope or binaural stethoscope. In auscultatory percussion, the ear pieces of the instrument being in their places, the other end is held by an assistant or by the patient in the desired locations, while the examiner percusses lightly in various directions from it. The differences in pitch and quality of sound are thus greatly exaggerated.

In auscultatory friction the instrument is held in like manner while the finger tip, pencil or other similar object is rubbed over the skin. The sound thus produced is heard distinctly so long as the rubbing is made over the hollow organ over which the stethoscope is placed, and not moved more than two or three inches away from it, while upon crossing the boundary to another organ even an inch away, it is no longer heard. Ewart, of London, has recently confirmed the importance of this sign in the differentiation of the abdominal viscera.

For further confirmation you may percuss the abdomen as before, except that the patient is standing. Note the results thus obtained and repeat the percussion after the patient has ingested two glasses of water. More forcible percussion will often be necessary in this position to bring out clearly the different sounds.

Compare the findings from these various percussions under the following different conditions :

I. The stomach and transverse colon being both empty except gas, with the patient recumbent, tympanitic notes, nearly always different in pitch

and quality, will be heard over these two viscera, while occasionally a still higher pitched sound may be heard lower down over the coils of the small intestine. The boundary above, between stomach and heart can then be generally made out except in fleshy persons (who are not often sufferers from serious gastric disease) or when there is very little gas in the stomach. In these cases inflation will be necessary and this will also greatly intensify the difference between the percussion notes over the stomach and colon. The inflation may be made by the method already described, or by forcing air in through a tube.

II. With the same conditions except that the patient is standing, the results should be much the same, though since the gas rises to the highest part of the stomach, there is often a greater tympany there. This facilitates the determination of the boundary between the stomach and heart and between the stomach and lungs. If there should be even a very moderate amount of fluid remaining in the stomach, it will give a narrow zone of dullness at its lowest part.

III. With the colon empty and the stomach containing two glasses of water, you will have the same findings as before while the patient is recumbent, except that the tympany over the stomach should be more marked even without inflation, but upon the standing position being assumed, the condition is immediately and strikingly changed. There is now a decided zone of dullness across the lower portion of the region over the stomach, while the note over the intestines remains tympanitic as before.

After finishing percussion further useful information may be gained by trying clapotement again with the two glasses of water in the stomach. While the patient is lying on the back, as before described, make repeated tapings with the fingers over different parts of the epigastric region. If a loud splash is easily obtained over a wide area, the stomach walls are atonic—its motility bad. If the organ has been found to be enlarged, there is gastric dilatation which is more or less extensive according to the position of the lowest level at which the splash can be produced. The use of the phonendoscope will enable you the more readily to determine this level, though you may sometimes be misled by it, since a splashing sound may often be heard through it at some little distance from the place where it is actually produced. Clapotement is less reliable than percussion for the determination of boundaries, but the two methods should both be employed when accuracy is desired so as to have one confirm the other.

In a patient with a not too sensitive intestinal mucous membrane, you may determine the position of the colon in its various parts (whether it be in contact with the stomach, or has dropped down below the latter) by filling it from below with a warm weak solution of salt while he lies on the back or right side with the hips somewhat elevated. By injecting enough of the salt solution (or any fluid which can be retained a few minutes) you may be able to obtain a dull percussion note, or by auscultation with the phonendoscope while you tap over the different parts, you may hear gurgling

or slight splashing sounds over the course of the colon, especially if it be dilated. For the success of this procedure it is necessary that the stomach should be wholly empty, so that any splashing sound could arise nowhere except in the colon or cecum.

Having by the methods already described determined the boundaries of the stomach, it is possible by similar means to obtain sufficiently reliable information concerning the motor function of that organ for ordinary clinical purposes. This comparatively simple method of determining the motility of the stomach was originally described by me three years ago, and so far as I can learn, its practical usefulness has never been disputed.¹

As already mentioned, the splashing sound heard over the partly filled stomach indicates roughly the degree of relaxation of the muscular walls as well as the extent of a decided dilatation. But by percussion and clapping together we may learn with a reasonable approach to certainty how long a time is required for the organ to empty itself after various kinds of meals and even after different foods. Knowing exactly where the lower boundary of the stomach is in any given case, whenever it is desired to make the test, we let the patient stand, at the same time leaning a little forward, and then percuss over the region corresponding to the lower segment of the viscus. If there should be even an ounce or two of fluid present, a narrow zone of dullness can in this way usually be demonstrated. With a large portion of the meal still in the stomach this zone of dullness would be marked and easily manifest. Besides, with dilatation or even a moderate motor insufficiency, there would be confirmatory evidence from the splash obtainable in such conditions with the patient recumbent, even though there were not more than half an ounce of fluid present. Since it is in atonic stomachs especially that such tests are most needed, the practicability and value of this, which I may claim as my own method, are apparent.

After first fixing precisely the boundaries of the stomach, you have only to make this simple test 2 hours after a very light (Continental) breakfast, 4 to 5 hours after a mixed breakfast including meat or eggs, or 6 to 7 hours after a hearty dinner. If it is empty at such times, you may infer a good motility. If you find the fluid persisting for several hours longer, you will recognize decided motor insufficiency and if with this there is also enlargement and a loud splash over a wide area, you can safely diagnose dilatation. There are all degrees of this condition, and so long as there is no stenosis of the pylorus, they are all curable by non-surgical measures.

¹ The Diagnosis of Changes in the Size, Position and Motility of the Stomach in Cases Where Intra-gastric Instruments Cannot be Used. By Boardman Reed, M.D. *Med. News*, January 18, 1896, and *Berl. klin. Wochenschrift*, 1896, No. 43.

SELECTION AND TRANSLATION.

*CHRONIC SYPHILITIC ULCERATION OF THE
FOOT AND ANKLE.*

BY J. GARLAND SHERRILL, M.D.

THE case occurred in a white woman, aged thirty-nine, and was of eight and a-half years' duration and dated from pregnancy.

As will be observed by the accompanying illustrations the foot is markedly hypertrophied, which appears to involve not only the skin but also the subcutaneous cellular tissue, and from all outward appearances the bone also participates in the enlargement. The measurement of the dis-



eased foot at this time was ten inches long, eleven inches in diameter at the instep, and twelve inches around the heel, while the healthy foot measured nine inches in length, eight inches at the instep and eight inches at the heel.

The appearance of the foot and leg, with the punched-out ulceration, bogginess of the part and the little tendency to healing, led me to suspect syphilis as the cause of the trouble, notwithstanding the absence of a specific history. The ulcers were more ragged and deeper than usually found in lupus and the integument did not have the dark reddish discoloration usually seen in the latter disease.

On January 1, 1898, the patient, becoming discouraged at the prospect of cure, consented to an operation, and amputation was performed at the lower third of the leg January 27, 1898. Complete healing of the amputation wound took place in sixteen days and the patient began to improve immediately after the operation was performed. On the second day after removal of the limb she was placed upon a preparation of mercury with marked improvement in general health, and at the present time she is in excellent condition.

Examination of the specimen reveals masses of gummatous tissue scattered throughout the cellular tissues. There was no involvement whatever of the bone or deeper structures of the foot, save a slight thickening of the muscular tissues.



It appears from developments in the case that this is one of those rare conditions which occur late in syphilitic patients who have not followed a well-advised plan of treatment for this condition.

The amputation was made because of inability to obtain permanent healing of the diseased tissue, to remove the constant source of irritation and drain upon the vitality of the patient, and also to remove a useless member, as the foot had become so stiffened and so large that it was of no service whatever.—*Medicine*.

ON ARTIFICIAL STERILITY. AN ENDEAVOR TO ESTABLISH INDICATIONS FOR PREVENTING CONCEPTION.

BY N. P. MARJANTSHIK, M.D.

Translated by Dr. A. Robin, especially for the INTERNATIONAL MEDICAL MAGAZINE,
from *Medicinskoe Obosrenie*.

I INTEND to say a few words about a subject considered immodest even among physicians. The physician concerns himself with all the needs of the human organism, and apparently such a relation should not exist to a subject of even less importance having only a remote connection with the health of the organism. But reality shows something different, at least one is led to think so judging from the fact that the literature on this question is suppressed. Not till the end of the eighties of our century, did papers, devoted to the subject which especially interests us, make their appearance, and after the happy debut of Mensing, a series of papers

on this question appeared in Germany. However, the view held on the discussion of this subject in the press is shown by the numerous attacks against Mensing; also by the fact that the author himself ventured to speak of this subject only under a pseudonym—Hasse—giving his right name in the later editions only.

Notwithstanding the series of papers which followed Mensing's works in the German literature, that of other countries followed his lead but slightly, and the text-books on gynecology and obstetrics continued to pass the subject unnoticed. The first attention paid to it was in the manual of Treub (in Holland). In our country I heard for the first time the open defense of artificial sterility in certain cases, by Professor Dm. Osk. Ott, at the end of eighties or the beginning of nineties at the session of the St. Petersburg Obstetric and Gynecologic Society. Last year Professor Tolotshinoff also devoted to it a few lines in his text-book. With all this the literature on this subject is exhausted. At the same time one cannot really but wonder at this meagre literature. There were worked out indications for operations which subject the life of the mother to great danger, as Cesarean section, or crippling her for life as symphyseotomy, or endangering the life of both mother and child, as induction of premature labor, especially the artificial, so-called legal, abortion (here the danger was especially great prior to antisepsis), but no one said a word concerning artificial sterility in connection with these other means. It is sufficient for every obstetrician to take at random several cases in his practice, cases which were conducted on the old principles, to convince himself of the necessity of exact indications for artificial sterility and the widest propaganda of *healthy* means for its accomplishment in well-defined and appropriate cases. The affair is left to take its own course, and in cases in which the health of the woman is threatened by pregnancy or labor, the discussion at present is of an indifferent character.¹ Let her become pregnant even if she should not; we will produce, when necessary, an abortion or induce premature labor, or perform a Cesarean section. In other instances, the woman, advised by her intimate friends, makes liberal use of injurious means of preventing conception. It is necessary to put the affair on the right track; it is necessary that physicians, led by proper indications, should assert their influence in such cases.

To point out briefly the indications for the employment of means for producing artificial sterility is the modest object of my short paper.

I will begin with the *narrow pelvis*. At present, in absolute narrowness of the pelvis from whatever cause (swelling, occluding it, spondilolisthesis, rachitic changes, etc.), if pregnancy exists, a Cesarean section is performed when it is nearly at term, or artificial abortion in the earlier stages. Not a word is spoken of the relief of such a woman from the necessity of an operation which threatens her life. True, the Porro operation is also intended to remove the possibility of future conception, but, in the first place, it is performed only after the life of the woman has been suspended on a hair during the Cesarean section; second, thanks to the modern enthusiasm for operating, it is preferred to subject the woman to a second Cesarean section rather than perform a Porro; third, this operation depriving the woman of her uterus, does not remain without some influence on her general health; and, finally, this operation of such a serious nature

¹ The advice of some not to live with the husband cannot be taken into consideration, for it is only very seldom that it can be followed.

does not always guarantee that there will be no possibility of future pregnancy, and in this case of a more dangerous character—extra-uterine.¹ Moreover, however noble the idea may be of giving a child to even such a mother (though we must refrain from doing this before we consult the mother as to whether she desires to expose herself to such danger); however good may be the results of Cesarean section at present, we will not for a long time to come, if ever, be in the position to create favorable conditions for a Cesarean section in every place of our broad country, conditions at present in the possession of clinics and well-established hospitals only. Therefore, it is my sincerest and profoundest conviction that in such cases there should be a wide application of means to prevent conception.

The question as to the relations of pregnancy to heart disease and the influence exerted by each on the other stands at present as follows: Under the influence of pregnancy chronic heart diseases assume a more rapid and fatal course.

On the other hand the latter do not remain without an unfavorable influence on pregnancy, causing in a great many instances premature expulsion of a dead child, in others interrupting pregnancy in the beginning before the embryo is viable.² There is no wonder, therefore, that Peter absolutely prohibits marriage to any girl suffering from heart disease, and Jaccoud—to every girl who had prior to the contemplated marriage attacks of loss of compensation. I think that we are hardly able to deprive a girl of the possibility of entering into matrimony, and is it not possible for us in such cases to bring about results contrary to our wishes, as is feared by Jaccoud, who says: “Se le mariage est ardemment désire, il ne faut point s’y opposer, dans la crainte de prononcer une syncope, c’est-à-dire l’accident le plus grave que l’on voulait éviter”? It is far more reasonable also here to apply the means leading to artificial sterility. If we reason thus with regard to heart disease, taking mostly into consideration the health of the mother, how much better application will our remarks find in the case of women suffering from tuberculosis of the lungs, where the interest of both mother and child are equally concerned. The old view that pregnancy inhibits the progress of consumption, that during pregnancy the woman gets even better, has become obsolete. The recent statistics clearly show that pregnancy, instead of holding back, favors the rapid course of the disease, and if pregnancy fails to do it, labor, especially the period after confinement, will surely accomplish it. What concerns the offspring, besides the considerable number of miscarriages and premature births, the tuberculous give birth in the majority of instances to a scrofulous generation, many children dying within the first five years from tuberculosis. Have we the right to subject to a great danger the life of a newly-married girl with incipient tuberculosis (who, in fact, should not get married at all, according to the advice of Spiegelberg); have we the right to permit her to conceive, and does humanity need that debilitated, sickly generation, only an insignificant portion of which survives the critical period of infancy to enter into life, at best, as candidates for consumption at the first favorable instance. No doubt, artificial sterility of the woman will also in this case be a salvation for both her and humanity.

¹ Cases of Koeberle and others.

² That influence, it is true, is quantitatively different in different kinds of heart trouble and valvular disease, but only *quantitatively*. In general, it is bad in all cases.

Diseases of the kidneys (Bright's disease) and diabetes often complicate pregnancy. Nature herself endeavors in many cases to aid the pregnant woman, and pregnancy is frequently interrupted. Physicians follow the path marked out by nature, and inflammation of the kidneys complicating pregnancy is recognized by all authorities as an important indication for artificial abortion or premature labor. From this there is only one step to the question, which unfortunately is so seldom asked, what is to be done in cases in which inflammation of the kidneys precedes pregnancy? I think beyond doubt that the only answer to this question can be: prevent the advent of pregnancy. Why should we aggravate the morbid process in the kidneys by a new and such a serious condition as pregnancy, and then, with the view to remedy it, subject the woman to harmful operative interference, when the most natural way would be to give a chance for the inflammatory process in the kidneys to heal without complicating the healing. When a woman nurses the child we observe a very interesting phenomenon: all her sexual functions are concentrated upon this one process—nursing. Menstruation ceases; conception does not occur. (I speak, of course, of the great majority, not considering the exceptions.) The uterus, allowed a rest of 10 to 12 or more months, assumes an entirely normal state in the majority of cases, and a freshly occurring pregnancy in such a uterus runs a normal course, without complications. This, however, is not observed in cases in which the woman for some reason does not nurse. The favorable condition for involution of the uterus is removed. She is still swollen, her uterus enlarged when menstruation occurs, soon followed by conception. How she fares under these conditions is known to every practitioner. Miscarriage in the course of pregnancy of such an imperfectly regenerated uterus is of frequent occurrence, and if the pregnancy is prolonged, the woman appears an absolute martyr during its entire course. She experiences all sorts of pain from the very beginning, the pains being worse than those of labor for they are futile. During the last months the woman suffers from false labor-pains, every week hoping for real labor as the only salvation. Such observations ought to serve us as an indication that every woman requires a rest of one to one and a-half years after each labor before she can again take up her destined task. Of diseases of the uterus in which conception is possible, but should be avoided, at least temporarily, I will mention prolapsus uteri. Under this I include those cases in which the cervix is so near the introitus that during pregnancy no elevation of the uterus takes place but, on the contrary, with each month it comes down lower and lower. Pregnancy terminates prematurely, and during labor the incomplete prolapse becomes complete. To sum up we come to the following conclusions:

Prevention of conception is indicated in many instances. *A. Forever:* (1) In narrow pelvis of the third degree. When the mother cannot or does not desire to run the risk of a Cesarean section. (2) In pulmonary phthisis. (3) In heart disease when disturbances of compensation occur prior to marriage.

B. Temporary: (1) In Bright's disease and diabetes so long as disease exists. (2) In heart disease developed after one or several pregnancies. (3) In prolapsus of the uterus until cured. (4) During one to one and a half years after each confinement.

REVIEW OF MEDICAL AND SURGICAL PROGRESS

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Formalin as a Test for Bile Pigment. Professor Browiez (*Ally. Wiener Med. Zeit.*, 1898) having noticed that when the liver was hardened in formalin the bile was not only preserved in the ducts but also showed certain color reactions (yellow and green), called the attention of Professor Gluzinski to this fact, whose researches in this line have resulted in his giving the following as a test for bile pigment in the urine: Take three test-tubes, place 3 c. c. of suspected urine in No. 1, also 3 c. c. in No. 2; to the No. 2 add 1 c. c. formalin and boil for a few minutes when a greenish color results, the intensity of the color depending upon the quantity of bile pigment present. This color is better shown by contrast with urine in tube No. 1. One-half of the contents of No. 2 is poured into tube No. 3, to which is added a few drops of concentrated HCl, giving at once an amethyst-violet color.

Some Experiments in Uric Acid—Urea. Pearce (*Jour. Am. Med. Ass.*, Nov., 1898) records some interesting experiments on the relations of uric acid and urea to internal metabolism especially as to the determination of uric acid on a milk diet. For this purpose 2 cases of Weir Mitchell's were selected, one, a hysterical woman of 40 who was taking the rest-cure, the other, a man suffering from recurrent melancholia. In the first case, at the end of the week of milk diet the urea had fallen to 1.4 per cent. while the uric acid decreased to .04 per cent., the amount of urine varying to the extent of 20–30 cm. The specific gravity and the pigment were also considerably reduced. At the end of another week the urea had lessened to 1.3 per cent. and uric acid to .03 per cent. By the eighteenth day the lowest point was reached: Urea 1.2 per cent., uric acid .019 per cent. Then eggs were added. The uric acid continued to diminish while the urea promptly increased to 1.4 per cent. When meat diet was given on the twenty-second day the urea which had then risen to 2 per cent. receded to 1.6 per cent. while the excretion of uric acid began to increase to .03 per cent., .034 per cent., reaching as high as 4 per cent. (urea 2 per cent.) on the twenty-fifth day. On the twenty-sixth day the

uric acid reached the normal standard (.046 per cent.) while the urea lacked 8 per cent. of normal. This leads the author to the conclusion that while the excretion of both urea and uric acid tends to lessen when proteids are cut off or suboxidation of the tissues takes place, yet the ratio of urea and uric acid is not held in a fixed proportion. If one is more, the other is apt to be less. The appended table also establishes the fact that the uric acid is reduced to a minimum on a milk diet. Traces of indican were detected only after solid food was largely added. A. R.

Bromide of Strontium in Epilepsy. Antony Roche (*Lancet*, Oct. 15, 1898), since his initial notes, has not met with any case where this remedy has failed to cure or reduce the number of attacks. Some of his cases have been apparently absolutely cured. The continued use of this bromide has not been followed by any bad results, contrary to his experience with other bromides. At first he used it in combination with others, but he has become convinced that its use alone is most beneficial. To control the paroxysms it must be given in full doses—from 1 to 3 drachms daily—and where there has been failure it has been apparently due to the too small dose. It may be given, and this he urges, for long periods. In addition he regards the diet of much importance, restricting his patients to fish and vegetables.

Treatment of Pneumonia Based on the Condition of the Vasomotors. R. Van Santvoord (*N. Y. Med. Jour.*, Oct. 8, 1898), reviewing the literature of experiments upon animals and referring to his own personal experience, finds that the cause of the heart failure in pneumonia is not in an intrinsic condition of the heart muscle, but in the vasomotor dilatation of the peripheral vessels produced by the toxin. The increased strain upon the right heart is, at least in part, due to the greater amount of work thrown upon the organ as a whole by the necessity of maintaining the equilibrium of the circulation which is threatened by the paralysis of the vasomotors. The most obvious method of combating extreme dilatation of the peripheral vessels is to administer drugs which cause their contraction. With this object in view he employed chloride of barium in doses of four grains every four hours, with a good result in only one case. Fluid extract of ergot, half a drachm every three hours, benefited a few cases. Strychnine causes contraction of the peripheral vessels. The remedy which best meets the requirements is digitalis, which must be used in large doses. Although nitroglycerine is generally contraindicated, yet in a few cases it may relieve the embarrassed right heart by still further increasing the peripheral dilatation, thus lessening the amount of blood to be forced through the lungs, an action analogous to bleeding.

Diphtheria in London. F. A. Dixey (*Med. Press*, Oct. 12, 1898), reviewing the statistics for the past two years, finds that the amount of diphtheria is still high, but is diminishing. The seasonal relations are the same as heretofore. The interruption to the usual course of mortality coincident with the two chief school holiday periods is again apparent. The new evidence, like the old, tends to show that school-infection is an important factor in the spread of diphtheria. The decreased mortality coincident with the employment of antitoxin has continued.

Diphtheria Antitoxin in Whooping-cough. Cerioli-Pavia (*Klin. therap. Wochenschrift*, 1898), during a severe epidemic of whooping-

cough, used the antitoxin for diphtheria and obtained much more satisfactory results than from any medicinal agents resorted to. The cases selected, 15 in number, were of severe type with complications and all made good recoveries—the duration of each case being much shortened. In one case, 4 hours after first injection, the symptoms showed marked improvement, in the others 10 hours to 3 days gave a like result. The antitoxin not only ameliorated the disease itself, but also the complications, especially of the bronchi and lungs. The dose given was 5–10 c. c., repeating the same according to the rapidity of its action, but generally one injection sufficed. The literature on the subject shows that when both diphtheria and whooping-cough were present in the same patient, the serum gave relief to both conditions. Though as yet the mode of its action is unknown, it appears that there may be some analogy in the exciting causes of the two diseases.

Bourget (*Correspondenzblatt für Schweizer Aerzte*, No. 17, 1898) describes a test-paper for the detection of iodides in the saliva and urine. An ordinary filter paper of any convenient size, say eight by twelve inches, is immersed in a five per cent. solution of boiled starch and allowed to dry. The surface of the paper is then divided into squares, two and one-half by two and one-half, and two or three drops of a five-per-cent. solution of persulphate of ammonia applied to each square, after which the paper is again put away to dry in a dark place. If any liquid containing traces of iodine comes in contact with such a paper, a blue color is produced. On the first square the time of the taking of the iodide capsule is marked, and on the remaining squares the hours at which the patient is to "record" his saliva. Thus the physician need not personally superintend the test, which extends over 24 hours, but merely takes the readings at his next visit. As the test-paper begins to lose its virtue after two or three weeks, it is found more convenient to give the patient simply a starched paper, marked off in squares as described, and to add the sulphate of ammonia after the saliva has been deposited. Delicacy of the test, 0.00005.

A. R.

DISEASES OF THE CHEST.

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Hemorrhagic Pleuritis in Children. Lewin (*Jahrbuch für Kinderheilkunde*, Band XLVII., 1898, No. XVI.) found 50 cases of pleurisy with effusion in 10,416 cases treated in the children's polyclinic in Berlin. In 4 cases the exudate was hemorrhagic. Reimer in 121 autopsies in cases of children with pleural exudate found five to be hemorrhagic.

Israel found the condition only twice in 206 autopsies in children with exudative pleurisy. Lewin in his cases excluded tuberculosis, syphilis, sarcoma, cancer, hemorrhagic diathesis, heart disease, acute infectious disease, and nephritis. The cases were between the ages of twelve months and five years, 1 girl and 3 boys. In one the outcome is unknown, the other three recovered. When the above-mentioned causes are excluded this form of pleural exudate seems very rare. The diagnosis cannot be made with certainty between this form and other pleural effusions except by the use of the exploring needle. Gerhardt mentioned pallor of the skin as a symptom peculiar to the hemorrhagic form and one case presented this phenomenon. The prognosis as a rule is favorable. No cause can be assigned for the presence of the blood in the case reported.

Contribution to the Pathological Anatomy of the Morbus Basedowii Especially with Regard to the Affection of the Muscular System. Askanazy (*Deutsches Archiv für klin. Med.*, B. 61, p. 118) reports the results of the examination of the entire voluntary muscular system in 4 cases of this disease, and in each found a widespread degeneration of the muscle, causing a replacement of the fibers by fatty tissue. Many of the characteristic symptoms of the disease can be explained by this discovery, especially the tremor, exophthalmos (from weakness of the muscles of the orbit) incoördination of the eyeball, and muscular weakness. The heart muscle does not appear to be included in the process, but attention is called to the presence in the hearts of such cases, of excess of connective tissue due to a proliferation subsequent to degenerative process. In none of the cases was the nervous system at all affected although carefully examined. The changes in the thyroid were those usually found in the disease; proliferation of the epithelium of the follicles, absence of the colloid material and failure of differentiation of the cell masses. Askanazy considers this observation to be the first of the kind recorded.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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A Case of Splanchnoptosis and Achylia Gastrica. At a recent clinical meeting of the Medical Board of the Massachusetts General Hospital, Dr. Putnam presented a man the upper border of whose stomach when distended with air was 2 to 3 finger-breadths above the umbilicus in the horizontal, and at the umbilicus when in the upright, position. The lower border reached the pubes. The kidneys could be palpated, the right showing a considerable displacement downward. Other organs were normal. Repeated examinations of the stomach contents showed a complete absence of HCl. There was no gastric digestion. Putnam considers this combina-

tion of conditions infrequent in men, and an expression of neurasthenia or neuropathy. He construes the symptoms as pointing merely to achylia gastrica, and not to complete atrophy. [Displacements of the abdominal organs though relatively less frequent in men than in women, yet occur often enough even in the male sex and should always be looked for in obscure cases of ill health. Such persistent and complete absence of secretion means usually atrophy of the glands and not a neurosis merely. B. R.]

Conservative Treatment of Intestinal Occlusion by Internal Electricity. Johnson (*Jour. Am. Med. Ass.*, Oct., 1898) quotes some European authorities in support of the statement that in obscure cases of intestinal obstruction where the indications for operation are not sufficiently clear, electricity applied through water in the form of an enema will save many a life. The galvanic current of moderate intensity should be used. A 1 or 2 per cent. solution of salt is more efficient than warm water alone. As yet this method has been in use principally in Europe. [Dr. Margaret Cleaves, of New York, to whom the writer does not refer, has advocated enthusiastically the use of electricity conveyed into the bowel by means of water. B. R.]

Tetany and Tetanoid Spasms Associated with Gastric Dilatation Treated Surgically. Robson (*Lancet*, Nov., 1898) believes that tetany is frequently associated with gastric dilatation; he does not, however, concur in the opinion held by Trevelyan that it is a symptom of extreme gravity, the majority of cases terminating fatally. He thinks an operation on the stomach will cure many cases otherwise fatal. He has operated on 30 cases, several of the patients suffering from quite severe attacks of tetany. Of the four cases the author reports as an illustration one had an attack which simulated strychnine poisoning. In all these cases stenosis of the pylorus accompanied by dilatation of the stomach was found, and an operation was followed by a complete cure of the spasms. Curiously, he has never seen this symptom in other than dilatation due to simple causes, such as adhesions to the pylorus, gall bladder or liver, or in stricture of the pylorus due to cicatrization of ulcers; but when the dilatation was unobstructive, tetany was not observed. As to the cause, the author came to the conclusion that it is due: 1st to the absorption of some poison from the dilated stomach which increases the excitability of the nervous system and 2d to a reflex effect produced by the painful contraction of the pylorus.

Intestinal Obstruction from Gall Stones, With Report of a Case. Lord (*Jour. of Am. Med. Ass.*, Oct., 1898) reports the case of a man, aged 70 years, who was suffering from vague gastro-intestinal symptoms for about one year, when suddenly he was attacked, while at breakfast, with acute pain in the left side, midway between the umbilicus and the spine of the ileum. This was soon followed by evacuation of the bowels and vomiting which became stercoraceous on the following day. Temperature was 101 and pulse 120. Tympanitis moderate. Little pain on palpation. A tumor-like mass could be recognized below and internal to the sigmoid. A probable diagnosis of volvulus having been made, an operation was performed, which revealed an impacted gall stone $4\frac{1}{2}$ by 6 inches in circumference and $2\frac{1}{16}$ inches in length. A partial analysis showed it to be composed largely of biliary sediment and fat. The author thinks that gall stones may exist for years without their presence being known. Obstruc-

tion usually takes place by mechanical occlusion. The stones of less size than the caliber of intestines may also, in some cases, bring about an obstruction by early stimulation and contraction of the circular muscular fibers. The possibilities of spontaneous evacuation of the stone is possible in from 30 to 50 per cent. of the cases. The remaining 50 to 80 per cent. will die if not relieved by operation. The mortality from the operation is also very high, but he believes that if all cases were operated upon within the first 24 hours the mortality would be reduced. Fecal vomiting should be the signal for operative interference in any form of obstruction when other means fail. He finds lavage of very great value even in cases surgically treated. When employed before the operation it prevents vomiting.

Gastric Surgery in Carcinoma and Simple Ulcer. Kocher (*Correspond.-bl. für Schw. Aerzte.*, Vol. XXV., 1898), in an elaborate paper on this important subject, places himself as an advocate of early operative intervention. He believes that we must not wait until a swelling appears. We must decide on an operation when the case is that of an adult or elderly person suffering from protracted stomach trouble and presenting symptoms which point to ulcer or stenosis. An exploratory incision, even should it remain such, is entirely harmless under proper asepsis. Obstinate progressive stomach trouble in old people, who do not suffer from ulcer, stenosis and similar affections, is of much rarer occurrence than many physicians think, excepting, of course, the "sympathetic" stomach affections in gall stones, floating kidney, genito-urinary or other diseases. The only disease which may mislead in the diagnosis of carcinoma is simple ulcer, but in this affection the chemism of the stomach is different inasmuch as it shows hyperchlorhydria. Yet even in this case an operation is indicated in a great number of instances. When successive and profuse hemorrhages occur, or when internal treatment fails to effect a cure, an operation is the only means of saving the life of the patient. It cannot be too strongly emphasized how important operative intervention is in *repeated* hemorrhages, even though slight. We need not wait until the patient is almost exsanguinated and at the last moment operate; it is wiser to resort to an early gastroenterostomy, excision of the ulcer, or finally a circular resection of the stomach. In all instances the indications for operation are that much more urgent when the least suspicion of carcinoma exists. When, in old people, symptoms of ulcer appear; when medication fails to bring about the desired results after a lapse of a certain time; when pain, vomiting and especially repeated bleeding point to great obstinacy of the affection, then an operation is absolutely necessary, before exhaustion or perforation take place. The author, as well as Mikulicz, has observed that in cases where a laparotomy reveals the absence of suspected grave conditions, in the neuroses, the affection permanently disappears after the operation. Under all circumstances, when we are in doubt, an operation is the only sure means of preventing further complications. He points out a number of cases of carcinoma in his own practice, and those observed by others, that were permanently cured by an early operation.

The Action of the Gastric Juice on the Bacillus of Tuberculosis. Sabrazès, Bordeaux (*Med. Press and Circular*, 1898), thinks the bacillus of tuberculosis is not appreciably modified by the action of the gastric

juice, either in the form of staining reactions. He points out that the greater part of the elements which constitute the bacterial cell are not susceptible of digestion by the gastric juice, towards which the cells act in the same manner as cellulose and nuclein. This latter body indeed would appear to enter largely into the composition of the bacteria. Moreover, the bacillus did not lose its vitality or its virulence until after thirty-six hours' contact with the gastric juice. It would then be injected subcutaneously in guinea pigs without producing any local lesion, but after each injection the animal lost weight to a marked extent, though this was promptly recovered from. The susceptibility of the guinea pigs was not diminished by these injections; indeed, it appeared to be enhanced thereby. These researches emphasize the necessity for the sterilization of articles of food, seeing that the bacillus is not amenable to the solvent action of the gastric juice.

Further Observations on a Case of Total Extirpation of the Stomach in the Human Subject. Schlatter (*Lancet*, Nov., 1898) communicates his further observations on his case of complete removal of the stomach. The patient's weight has increased $18\frac{1}{2}$ lbs. since the operation. Her general condition is excellent, and she is able to partake of ordinary diet without any inconvenience other than a feeling of pressure in the epigastrium and in both hypochondriac regions after a hearty meal. A quantity of milk amounting to $10\frac{1}{2}$ fl. oz. is quite capable of producing this feeling of pressure. Her digestive capacity can be judged from the following diet lists: Jan. 17th: milk, 33 fl. oz.; coffee, 13 fl. oz.; 3 rolls; 3 eggs; soups, $3\frac{1}{2}$ fl. oz.; fried sausage, 4 oz.; stewed apples, 7 oz.; whortleberries, 3 oz., and claret, 7 fl. oz. Feb. 5th: milk, $11\frac{1}{2}$ fl. oz.; 3 rolls; 3 eggs; soup, 4 fl. oz.; sweetbreads, $10\frac{1}{2}$ fl. oz.; cauliflower, 7 oz., and claret, 7 fl. oz. March 4th: milk, $10\frac{1}{2}$ fl. oz.; coffee, 7 fl. oz.; soup, 4 fl. oz.; roast veal, 4 fl. oz.; carrots, 14 fl. oz.; 4 rolls, and claret, 7 fl. oz. Her animal food varied between roast veal, Vienna steak, chops or cutlets, beefsteak, fried sausage, brain, sweetbread and fowl. Analyses of urine and feces showed a diminution of chlorides and nitrogen indicating an abundant absorption of albumen. Microscopical examination of the feces revealed an entirely normal condition. There were no putrefactive changes present, proving that the entire absence of the gastric juice, with its HCl, is without any influence on the extent to which putrefactive decomposition is developed in the intestine.

The Oppler-Boas Bacillus in the Diagnosis of Gastric Carcinoma. Knickerbocker (*Phil. Med. Jour.*, Nov., 1898) considers the presence or absence of the Oppler-Boas bacillus as of great diagnostic significance in carcinoma of the stomach. The bacillus is, as a rule, found in a medium containing lactic acid and is not associated with sarcinæ. These usually disappear and are replaced by the Oppler-Boas bacilli whenever the medium becomes favorable for the latter. Of the four cases reported by the author one presented sarcinæ and HCl but no Oppler-Boas bacilli; two others in which lactic acid was present showed the bacilli but no sarcinæ. From a study of his own and other cases reported by Boas and others the author comes to the following conclusions: (1) That, while not pathognomonic of carcinoma, the presence of the Oppler-Boas bacilli is of the utmost diagnostic value. (2) That their presence may be demonstrated in

nearly all cases at some stage of the disease. (3) That in a large number of cases the bacilli may be found before the tumor has involved surrounding structure to such an extent as to make extirpation impracticable. (4) That in a limited number of cases the bacilli may be found before palpable evidence of tumor.

A. R.

Neuritis from the Ingestion of Putrefying Pork. Spiller (*Phil. Poly-clinic*, No. 39, 1898) reports a case of peripheral neuritis produced by the bacillus botulinus, an anaërobic, motile microbe found in putrefying ham. The patient, a man 62 years old, after partaking of some pork, was attacked by acute gastroenteritis, which was from the beginning accompanied by pronounced symptoms of neuritis, the latter persisting long after the gastroenteritis was cured. Two other men who had eaten the same pork at the same time suffered only from gastroenteritis.

A. R.

Cancer of the Stomach. In a discussion of this subject at the San Francisco County Medical Society (*Pac. Med. Jour.*, Oct., 1898) several interesting points were brought out. Cheney, as a result of an examination of 150 cases found 20 of cancer of the stomach in subjects under 30 years (between 20 and 30), and 17 between the ages of 30 and 40, thus proving that the disease is not at all rare under 30. Of these 150 cases only 11 gave a family history of cancer. In no instance was injury discovered as an etiologic factor. Among the most prominent symptoms complained of pain was present in 130; vomiting in 128; while a tumor could be made out in 115 cases. Only 36 patients vomited blood. An aggravated form of dyspepsia was found in 38 patients. He further pointed out the fact that a tumor of the pylorus may be found in almost any part of the abdomen. Inflation of the stomach, either by means of bicarbonate of soda and tartaric acid or by gas, should always be resorted to. It is a perfectly safe procedure. The chemic examination of the contents of the stomach by itself is not conclusive. Rixford presented the stomach of a woman fifty-five years old on whom anterior gastro-enterostomy had been performed for cancer of the stomach. For two days after the operation she did well. On the third day there appeared symptoms of perforation and the patient died on the following day. The autopsy revealed an old ulcer on the posterior wall of the stomach, which perforated, probably as a result of the vomiting and the tugging during the operation. Carpenter favored introducing the electric light into the stomach for the diagnosis of dilatation. D. Tait blames the physician for sending to the surgeon the patients with cancer when they are almost on the brink of the grave. Considering the tumor from a pathological standpoint he concludes that, where the epithelial cells predominate we may expect early ulceration and glandular involvement. When, on the contrary, the stroma is in excess, we get extensive infiltration and symptoms of obstruction.

Study of the Motor Function of the Stomach by the Air of the Roentgen Rays. Roux and Balthazer (*La Presse Med. Belge*, No. 47, 1898) report the results of numerous experiments upon frogs as well as upon dogs and men. Liquids taken into the stomach began to be evacuated at the end of 2 or 3 minutes in dogs and men. Solids remained much longer, not passing out till some hours after ingestion—about 3 hours. Pure water emptied itself by the end of 5 to 10 minutes, but when to 50 c. c. of

water 5 to 10 grams of peptone were added, an abundant secretion was determined which persisted for 1 to 1½ hours until the mass was wholly liquefied, when it passed out. A 3% solution of HCl caused about the same phenomena, but a little more slowly, perhaps, according to the authors, favoring the production of peptones.

NEUROLOGY.

UNDER THE CHARGE OF

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A Study of the Lesions in a Case of Trauma of the Cervical Region of the Spinal Cord Simulating Syringomyelia. James Hendrie Lloyd (*Brain*, Spring, 1898) some time ago reported two cases which presented the clinical picture of syringomyelia, and were especially interesting, inasmuch as trauma was the cause of the symptoms. The microscopical report of one of these cases is now given, and it shows that other conditions than cavity formation may produce a symptom-complex resembling that of syringomyelia. The patient presented the Brown-Séquard form of paralysis, *i. e.*, he had paralysis of motion on one side of the body and dissociated paralysis of sensation on the other. The cause was fracture of the cervical vertebræ with compression of the cord at the level of the fifth, sixth and seventh cervical roots. The left antero-lateral column, the left anterior and posterior horns, and the anterior portion of the posterior columns were much degenerated at the seventh cervical segment, but the right side of the cord was nearly, though not entirely, intact. The ascending degeneration was confined to the left direct cerebellar and Gowers' tracts, and the anterior part of the posterior columns. The left crossed pyramidal tract was partially degenerated upward through one or two segments. The descending degeneration was in the left crossed pyramidal and Schultze's comma zones. No cavity was found in the cord. The inferences which the author draws from these findings are of much interest. The tactile anesthesia, observed in the right foot and leg as high as the knee, was explained as a hysterical phenomenon, because it was segmental and because the columns of Goll were not seriously involved. The preservation of tactile sense elsewhere is explained by the fact that the posterior columns were not seriously affected except in their anterior part, where the fibers are endogenous [?]. The disturbance of pain and temperature senses on the right side of the body is attributed to the involvement of Gowers' column on the left side of the cord. [The comparison of clinical phenomena with pathological findings has done much to increase our knowledge of the physiology of the nervous system. The case reported by Lloyd is one of considerable value. It must be remembered, however, that often organic changes do not explain sensory phenomena as satisfactorily as they do motor. Segmental anesthesia is common in syringomyelia, and its boundaries may vary from time to time. Dejerine and Spiller proved that the fibers in the anterior part of the posterior col-

umns of the lower thoracic region are not entirely endogenous, and Russell and Schaffer have recently confirmed their findings. The fibers in the ventral field of the cervical region may, likewise, be partly exogenous. Lloyd's valuable findings do not explain why, in his patient, pain sense was more involved than temperature sense, and they permit the conclusion that the fibers for these two senses are contained in the antero-lateral column, but not necessarily in Gowers' tract. Müller has recently shown that tactile sense is usually preserved in the Brown-Séquard form of paralysis, and Lloyd's case in this respect is not unlike many others.]

Hysteria in a Man Presenting the Symptoms of Chronic Intestinal Stenosis. Laparotomy Performed Twice. Dr. Strauss (*Berl. klin. Wochenschrift*, No. 38, '98) reports the following very interesting case: Man 29 years old; shoemaker, well until his fourteenth year, when he had typhoid fever followed by relapse. Later, when in the cavalry, he was injured by his horse falling on him, and sustained a fracture of the rib on the left side, from which he recovered completely. While in the hospital he suffered from obstinate constipation which could not be relieved by the strongest medication. The constipation was often accompanied by stercoraceous vomiting and polyuria. He sought relief in various hospitals and a diagnosis of stenosis of the intestines and diabetes insipidus was made. At that time he presented the following symptoms: severe vomiting, constipation, tympanites and severe pains in the left hypogastric region. Laparotomy was performed, but no pathological conditions were found. The patient, however, improved after the operation, his constipation being considerably relieved. One year later the patient came again to the hospital, for the relief of the former symptoms. Again a diagnosis of stenosis was made, and a second laparotomy performed. A long, thin, white, elastic band was found on the inner part of the mesentery. This band was excised. On the fifth day after the operation the bowels moved, and the patient felt much better. Shortly afterwards he again became a frequenter of various hospitals, suffering from constipation which often lasted for fourteen days. He was finally discharged without any improvement in his condition. While walking on the streets of Berlin he suddenly fell, and was brought to the hospital. The symptoms he presented indicated a serious lesion. Facies hippocratica was present to a great extent; the abdomen was enormously distended, rigid and very tender, the pain was excruciating, and could only be relieved by large doses of morphine. Severe and prolonged vomiting, hiccough, constipation, absence of flatus gave an almost completed picture of intestinal obstruction. Temperature and pulse, however, were normal. The urine was of low specific gravity, varying in amount from 2,500 to 4,800 c. c. in twenty-four hours, otherwise normal. On several occasions patient suffered from retention. He was getting worse, when suddenly he had a hysteric attack, and all the symptoms disappeared at once. His condition changed entirely, and even the obstinate constipation could easily be relieved by laxatives. He was finally discharged, cured.

A. R.

Ein Fall von acuter Arseniklähmung (a Case of Acute Arsenical Poisoning). Facklam (*Archiv für Psychiatrie*, Vol. 31, Nos. 1 and 2) reports a case of arsenical neuritis in a girl of 16, which resulted from a single dose of the poison taken with suicidal intent. The paralysis in the lower

limbs was greater below the knees, and in the upper greater below the elbows; it was also especially noticeable in the extensors. Reaction of degeneration was present in the distribution of the nerves most affected. Pigmentation of the skin, ataxia, absence of the patellar reflex, disturbance of sensation, early and rapidly developing muscular atrophy, were prominent features of the disease. Tachycardia was an interesting symptom. Complete recovery occurred without recurrence in a colder season of the year.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Movable Kidney in Children. Comby (*Pediatrics*, Nov., 1898) has observed a number of cases of this condition in children. Out of the 18 cases, 2 were 1 and 3 months respectively; 6 between 1 and 10 years; 10 above 10 years of age. Sixteen were girls and 2 boys. In 14 of the cases the mobility was associated with dyspepsia and dilatation of the stomach; 2 suffered from hereditary syphilis; chlorosis was found in 2; lenteric diarrhea in 1; migraine in 1; and psoriasis in 1. In nearly every case the affection was latent, and some cases were mistaken for chronic appendicitis. The author believes that in some cases the affection is congenital. The symptoms are often obscure and generally like those in the adult, although diagnosis is more difficult. Among the conditions with which it may be confused are: coprostasis, appendicitis, different cystic or solid tumors of the kidney, perinephritis, stone, etc. The treatment is the same as in adults.

What are the Symptoms of Nephritis? Edes (*Jour. Am. Med. Ass.*, Nov., 1898) ascribes a great deal of the confusion existing with reference to the pathologic significance of albuminuria to a faulty nomenclature. He objects to calling Bright's disease any other condition but the one actually described by Dr. Bright. Transient, physiologic or cyclic albuminuria is quite common. In the majority of cases it is provoked by exposure, which often tends to raise the arterial tension and thus bring more pressure to bear on the kidneys. Excessive exercise and vaccination also enter into the etiology of this disturbance. The more frequent occurrence of transient albuminuria, with only traces of albumen, is due to the more delicate reagents used. Thus, with "Tanret" (iodohydrargyrate of potassium), it is said to be detected in the majority of cases of healthy persons; rising to 90 per cent. in soldiers returning from a review, and 100 among cuirassiers just vaccinated and infantry after a cold bath. The author concludes from this that these delicate tests are absolutely of no value since they do not draw a line between danger and safety. With re-

gard to casts, a small number of them does not greatly add to the gravity afforded by small quantities of albumen. The so-called "mucous" casts are of no significance. The large casts, which are pathognomonic of grave renal changes, usually occur when their diagnostic significance is made almost useless by other symptoms. The author also expresses a belief that the origin of many cases of interstitial nephritis in young persons, where no other sufficient cause can be found, might be due to some difficulty of micturition.

Hemorrhages from Anatomically Unaltered Kidneys. S. Groszlik (*Sammlung klin. Vort. von Volkmann*, No. 203) says that renal hemorrhage is mostly of a symptomatic nature depending on an inflammation of the organ, or renal calculus, renal tuberculosis and renal tumors. However, a number of cases have been observed in which the most careful examination excluded any of the above-mentioned pathologic conditions, and, except simple hemorrhage, no anatomic changes were found. In these cases we must speak of an *essential renal hematuria*. The cases so far observed agree as to the fact that there is more or less of a hemorrhage from a kidney, the integrity of which could be well established either by operation or other means of clinical diagnosis. In single instances the hematuria was a local manifestation of a general dyscrasia-hemophilia. In others, again, it was observed that the hemorrhages resulted from excessive bodily exercise (horseback-riding, cycling, etc.) which produced a hyperemia of the renal blood vessels and consequent slight rupture of the smaller ones. But there remain many cases in which neither the one nor the other etiologic factor could serve as an explanation. Léguen in 1891 described a morbid condition of the kidneys which he called "*néuralgies rénales*," colic-like pains, often accompanied by hematuria, occurring in the kidneys of nervous, hysteric individuals, not dependent on any organic renal lesion. This symptom Léguen explains by the hyperemia induced by the neuralgia. Later, Broca associated these hemorrhages not accompanied by pain with disturbance of the vasomotor nerves, and here comes into consideration mainly a fault in the vasomotor centers, which leads to a weakening of the vessel walls and overfilling of the small blood vessels resulting in a "vasomotor hematuria."

DERMATOLOGY.

UNDER THE CHARGE OF

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A Case of a Rare Skin Disease, Acanthosis Nigricans. Barski (*Vratch*, Nos. 33, 35 and 37, 1898) reports a case of a boy 13 years old, in whom this disease developed at the age of 2, spreading very extensively. The symptoms are: Extreme pigmentation of the skin, hypertrophy of the papillæ, changes in the mucous membranes, nails and hair. Usually some disturbance of the general nutrition is also present. The pigmentation is always found on the neck, around the anus, external genitalia, also in the

axillæ, navel, hands, elbows and breast. The affection is symmetrical. The hypertrophy of the skin-papillæ is either slight and diffused or very marked and localized, often reaching the formation of tumors. This hypertrophy affects also the mucous membrane of the nose, lips, gums, cheeks and especially the tongue. The hair becomes dry and brittle, falling out easily; the nails become thick and brittle. Cachexia soon develops, accompanied by severe pains all over the body, especially the stomach. In some cases a carcinomatous growth can be discovered in the abdominal cavity.

A. R.

Hydroa Vacciniforme. White (*Jour. Cutan. and Gen.-Urin. Dis.*, Vol. XVI., 1898) reports some exceptional cases of this skin affection, the generally accepted description of which is as follows: It begins between the first and third years of life, almost exclusively in boys; the attacks occur in spring and summer after exposure to the sun; the lesions consist of small and large vesicles, which coalesce to form large bullæ, and are seated upon the face, ears, wrists and hands; they are often depressed in the center, like those of vaccinia, and present a dark sunken base from hemorrhage or necrosis; crusts succeed, followed by scars resembling those of smallpox. In the interesting cases observed by the author the striking features were the cessation of all activity in the process during the warm months for 10 consecutive years in a girl, the all-the-year-round outbreaks in a boy, the failure to be especially influenced by exposure to sun or weather, the extensive distribution of the cutaneous changes, the disease affecting large portions of the legs and arms beyond its usual seats, the large size and long duration of the individual lesions, the magnitude of the subsequent cicatrices, and the great disfigurement observed from time to time. The author concludes that his cases belong to an exaggerated and exceptional type of this affection.

A Report of 3 Cases of Urticaria Pigmentosa. Stelwagon (*Jour. of Cutan. and Gen.-Urin. Dis.*, Dec., 1898) reports 3 cases of this affection, which is comparatively rare, since these were the only cases observed in an experience of 20 years. The following points were especially noticed: The beginning lesions were, for the most part at least, wholly urticarial in their earliest stages; many behaved as such and disappeared, in others there seemed to be some mild hemorrhagic deposit with a tendency to more or less permanent cell infiltration. The eruption was most abundant on the neck and trunk. The disease began in very early life, 1 patient being 18 months old, in the other 2 in the first 6 months. Two of the cases were in females. The author believes that the disease is in the beginning essentially an urticaria, and the subsequent peculiarities are due to some secondary changes in the lesions.

Tuberculosis and Cooking. Dr. Woodhead in his testimony before the Royal Commission on Tuberculosis stated that while a temperature of 160° to 175° F. will kill the bacilli of tubercle it does not injure their spores, and that the latter will even resist a temperature of 212° F. for 15 min. It will thus be seen that cooking affords a minimum of protection from infection.—It has been ascertained by experiment that the temperature in the center of a cooked joint over six pounds seldom reaches 140° F.

PEDIATRICS.

UNDER THE CHARGE OF

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Dermoid Cyst Over the Center of the Large Fontanelle. A. Jacobi (*Arch. of Pediat.*, Oct., 1898) observed a patient who presented this rare tumor. The baby was first seen when 8 months old, and as there was fluctuation over the growth, Jacobi waited for ossification to close the fontanelle. When the patient was 4 years of age, he was operated upon, the tumor removed, and the clinical diagnosis verified. The author states that the diagnosis must be made from encephalocele (rare in this locality) and from meningocele.

An Epidemic of Cerebro-Spinal Meningitis. Wentworth (*Lancet*, Oct. 1, 1898) regards lumbar puncture as one of the most accurate methods of diagnosis in the various forms of meningitis. Great care is needed to be used in the introduction of the needle to obtain accurate information. If fluid is not obtained, the needle may not have entered the spinal canal, or it may have entered and remained outside the dura mater; or, it may be in the subarachnoid space, or it may be occluded by a blood clot or small particle of skin. Again, it may enter the subarachnoid space with its point buried in the dura mater on the opposite side; or the lumen of the needle may be obstructed by pressing against a nerve. To correct these errors he advises that a wire be introduced through the needle of a size to completely fill the lumen and if this is shown to be unobstructed and still the fluid does not flow, the probabilities are that the needle has not penetrated the dura mater and the operation should be repeated, directing the point more toward the median line. It is not sufficient in examining the fluid to depend upon microscopical appearances, but these should be supplemented by bacteriologic studies. An appearance of turbidity is no index to the severity of the symptoms. At times, there seems to be some relationship between the number of organisms found in the spinal fluid and the severity of the disease.

The Exanthem of German Measles. Forcheimer (*Archiv. of Pediatrics*, October, 1898) reviews historically the symptomatology of rubella and comes to the conclusion that much doubt may be thrown upon the significance of the eruption on the skin. He bases his observations upon a widespread epidemic of rubella occurring in Cincinnati, characterized by the presence of all those symptoms considered classic by the authorities, accompanied in his own experience by no mortality; only one case was complicated with nephritis, and to further evidence that the epidemic was one of rubella, he saw seven of the same children subsequently attacked in two or three months by rubeola. The results of his studies are as follows: Because there is practically no period of invasion in rubella the exanthem

appears at the same time as the exanthem. In no case did he see the enanthem where there was not present a suggestion of the exanthem. But epidemics of rubella differ very much in their manifestations. The enanthem is very short lived; it fades away within twenty-four hours, and then come certain results of involution, not present in the majority of cases. It is localized upon the uvula and soft palate and rarely invades the hard palate; he had not seen it extend to any other part of the mouth. It is the same eruption that is found upon the skin, characterized then by its size of efflorescence (that of a large pinhead), its arrangement (streaked and spotted and not crescentic), the absence of great infiltration (very small elevation) and, above all, its color, this being a pure pinky-red, almost exactly the same as the roseola of typhoid fever. During the process of involution there are sometimes left pigmented deposits, usually of a yellowish or yellowish-brown color, either in the form of spots or streaks. The claim that this enanthem is distinctive can be defended by comparison with the enanthem of those two diseases with which rubella is confounded. A glance at these will suffice to establish this proposition. In scarlatina the enanthem appears from twelve to twenty-four hours before the eruption; it appears on the pillars of the fauces in the form of the characteristic puncta, then rapidly spreads over the mouth in the form of a scarlet red coalescing eruption, which finally ends in desquamation, producing the strawberry tongue, and lasting well into the second week of the disease. In measles the enanthem begins upon the soft palate from thirty-six to forty-eight hours before the exanthem, in the form of purplish or bluish papules, arranged crescentically, extends over the cheeks, accompanied by the blue tongue; it is at its maximum with the beginning of the eruption and may take as long as three or four days to disappear.

The Rise, Progress and Present Needs of Pediatrics. Griffith (*Jour. Amer. Med. Ass.*, Vol. XXI., No. 17), in his address as Chairman of the Section on Diseases of Children, at the meeting of the Am. Med. Assn. of Denver, enumerates the more important text-books that have been written on the subject from earliest times, quoting largely from Adams' paper and bringing the list up to date, also the various pediatric journals, showing how admirably the United States is represented in this field of literature. He then takes up the various children's hospitals, beginning with the Dispensary for Sick Children founded in London by G. Armstrong in 1769, and shows how enormous the number now is, how admirably equipped and how wide their scope is becoming. He is not able to learn of a single organization devoted solely to pediatrics in England, though many of the societies have sections devoted to this subject; nor is there in Germany or Austria a single independent society devoted to the study of diseases of children. In fact, there is throughout Europe a great paucity of these special societies. In America there have been several organized attempts in this direction and already there are several independent city societies. In the public teachings of Diseases of Children, Jacobi is the authority that Rosenstein and Roberg introduced clinical instruction in Diseases of Children in Stockholm about 1750. Then, there is none known until 1850, when Giraldes and Bouchut began instructions in this line in Paris; while at about the same time Mauthner was teaching pediatrics in Vienna and Hauner in Munich. This branch now receives attention in nearly all of both the large and small universi-

ties of Europe, and is represented in many of them not by a clinical chair alone, but by a recognized full professorship. In America, progress in this direction has been very slow until recently. The first special chair was established in New York and occupied by Dr. Jacobi. In a careful study which he has made of 117 schools of medicine, there is in more than half of them a special chair for pediatrics; in some of these this subject is combined with some other, but in 7 only is there no announced teaching of diseases of children. Further, of the 64 colleges in which the department has its own independent chair, in 49 the title is that of professor; in only 15 is the title a minor one, as clinical professor or associate professor, showing that in most instances the incumbent enjoys the position of a full member of the faculty. All these facts demonstrate the high estimation in which pediatrics is held in America. All this progress has practically come about within ten years.

THERAPEUTICS.

UNDER THE CHARGE OF

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A Contribution to the Treatment of Cocaine Poisoning. Brennan (*N. Y. Med. Jour.*, Nov. 19, 1898) reports a case of severe poisoning from 2 drachms of a 10% solution of cocaine hydrochlorate left in the urethra for 3 minutes, and then milked out; on several previous occasions a 4% solution had been injected without producing anesthesia. Even this strong solution did not seem to lessen the pain, and in fifteen minutes was followed by dysphagia, marked swelling and cyanosis of the face, neck and extremities, dilatation of pupils, inability to breathe unless the tongue was held protruded, respiration spasmodic, loss of articulation and extreme nervousness, but no loss of consciousness. Treatment consisted in the administration of morphine sulphate, hypodermically, in eighth to half-grain doses, enough to control the severe spells of dysphagia, in conjunction with some stimulant, as strychnine, aromatic spirits of ammonia or nitro-glycerine. During the first 24 hours the patient received about $3\frac{1}{4}$ grs. of morphia, while on the two succeeding days it reached about one grain and followed the next day by the administration of chloral and nitro-glycerine with the manifestation of no further symptoms. He believes that morphia is the physiological antidote of cocaine.

Naftalen. Rosenbaum, of Tiflis (*Therapist*, Vol. VIII., No. 11), read an article before the Imperial Caucasian Medical Society upon the use of this product in rheumatic and gouty pains, epididymitis, buboes, sprains, eezemas, pityriasis, seborrhea, erysipelas, etc., with good results, and as a base to combine with mercury. It is produced of a peculiar crude naphtha obtained in the Caucasus at the foot of the Armenic Highlands. Its

medicinal value has been known for centuries in Asia Minor. This ointment is of stiff consistency, can be easily smeared, has a dark yellow color, melts about 60–70° C., and leaves no stain upon linen after washing. It does not mix with water or glycerine but easily with fats, and is soluble in ether or chloroform. It does not decompose and is readily absorbed, having this advantage over vaseline. It has also a strong antiseptic action.

Anesthetic Mixtures in General Anesthesia, with Special Reference to the Schleich Mixture. Richard Westbrook (*Brooklyn Med. Jour.*, Nov., 1898) believes that the question of anesthesia is much neglected. All anesthetics are dangerous in the hands of those who know how to use them, and much more so in the hands of those who know little or nothing about them. Many mixtures have been made to lessen the dangers. These have been principally of chloroform and ether alone, or with some other reagent. But one of the oldest is: 1 part of the chloroform to 3 of the ether, known as the "Vienna Mixture," and much used in Germany and Austria, in which the mortality is believed to be about 1–7,600 cases. Chloroform 1, and ether 6, parts is another. In early mixtures alcohol and chloroform were used either $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{5}$ strength, and this was very efficient for children. All these chloroform mixtures should be given alone. Billroth introduced the chloroform, ether and alcohol in the proportions 3, 1 and 1, which is said to rarely produce vomiting. British surgeons favored the A. C. E. mixture: 1 of alcohol, 2 of chloroform, 3 of ether. The main features of the A. C. E. mixture are that it is easy for the patient to take, and it acts well upon people with rigid chests or neck troubles. For some time Dr. Schleich, of Berlin, has been working with different anesthetics and combining them; he believes that one with a constant boiling point, about that of the body temperature, would be better than those that boil at a higher temperature. Squibb's experiments tend to show that these mixtures are mixtures, and not chemical combinations as is claimed by Willy Meyer. Another advantage of Schleich's mixtures is the rapidity with which the patient goes under and comes out. They are composed of chloroform, ether and petroleum ether (benzene); No. I. having a boiling point of 100.4°, and is intended for short operations. Its combination is benzene 1 pt., chloroform 3 pts., ether 12 pts. No. II. boils at 104°, and consists of 2 pts. less ether than the former. No. III. is made up of benzene 1 pt., chloroform 2 pts., ether 5½. The author has collected about 1,400 cases in which these were used (some having praised while others condemned them) and ends by saying "anesthesia always means a step towards death."

A Case of Argyria. Kraus (*Allg. Wiener Med. Zeit.*, Vol. XLIII., No. 29, 1898) reports a case of a man 63 years of age, who, several decades past, had acquired syphilis and had an irido-choroiditis in later years; otherwise his history was negative. Some years after that he was troubled with a post-nasal catarrh, and through the advice of a friend used an application of a 1 per cent. solution of silver nitrate twice daily, which he continued for ten years. In the last year he had been troubled with more or less muscular rheumatism, loss of weight and strength, giddiness, a numbness and trembling in the legs, with a whitening of the hair; at the same time he also noticed that his scalp, face and lips were turning a peculiar gray, and that, at the time of examination, his face was very dark,

resembling a negro. The mucous membrane of his lips and conjunctiva appeared as in cyanosis. The pharynx was a dark reddish gray. The author dwells upon the points of diagnosis between this pigmentation from silver with, no doubt, some bronzing from syphilis and that of Addison's disease.

Treatment of Cancer of the Ear with Solutions of Arsenic and Alcohol. Trunecek, of Prague (*Therapist*, Nov. 15, 1898, Vol. VIII., No. 11), reports a case of cancer occurring between the ear and mastoid process, involving the ear, and causing induration of the surrounding tissues. The diagnosis was confirmed by microscopical examination. It had caused ulceration of the skin, and over this ulcer he painted twice daily a solution of arsenious acid 1 part; alcohol and water, each 75 parts; having first removed all necrotic tissues. After a month of these daily applications the scabs that had formed began to fall off, and in about six weeks the falling off of these scabs was complete. Applications on the skin over the tumor had no effect. The patient was still under treatment at the time this paper was written.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Method of Differential Staining of the Micro-organisms of Human and Avian Tuberculosis, Leprosy and Smegma. Marcinovsky (*Medicinskoe Obosrenie*, Nov., 1898) finds that the ordinary methods of differentiation by means of stains or morphological properties of the bacillus of tuberculosis, bacillus of leprosy and bacillus smegma are inadequate. The bacillus tuberculosis hominis does not differ in its staining properties (as ordinarily employed) from the bacillus tuberculosis gallinarum, except, perhaps, in the more rapid staining and decolorization of the latter. Quite frequently it is necessary to differentiate the b. tuberculosis hominis from the b. of smegma in urine. A necessity for differentiation also arises in cases where leprosy is complicated by tuberculosis of the internal organs. From the staining and morphology of the bacilli of these last affections it is quite difficult to arrive at positive conclusions. The absence of giant cells and caseous degeneration, as well as the presence of a very large number of bacilli, are not always positive signs of lepra, for giant cells as well as caseous degeneration may exist also in the latter. Danielssen even thinks that leprosy may merge into tuberculosis. Some time ago the author, together with Semenovitz, devised a method for staining bacteria which stain with difficulty, such as b. mallei, b. typhi abdominalis, pseudotuberculosis, and gonococci in sections. The method consists in the use of a watery solution of the ordinary carbol-fuchsin (2 parts of water to 1 part of fuchsin) and Löffler's methylene blue. The procedure is as follows: The section is

immersed in carbol-fuchsin for 3–5 min., then thoroughly washed in water and again immersed in the methylene blue for 2–3 min. The bacteria will stain an intense blue. This method the author also employs for differentiating the bacillus of tuberculosis, bacillus of leprosy and bacillus of smegma. After repeated experimentation he got the following results: *B. Tuberculosis hominis* does not take the stain at all. *B. Tuberculosis gallinarum* stains readily. To stain these the section is kept in the carbol-fuchsin 6–8 min., in the methylene blue 5 min., the further procedure is as usual (alcohol, oil of bergamot, xylol and balsam). The bacilli are stained red, whereas all other bacteria and the nuclei of the cells are blue. Alcohol does not wash out the red color. Bacillus of leprosy stains readily (carbol-fuchsin, 2–3 min., methylene blue $1\frac{1}{2}$ –2 min.). The rods are red and often contain spores. Alcohol decolorizes them very rapidly and still more rapidly are they decolorized by prolonged immersion in the methylene blue (10 min.). Bacillus of smegma also stains red (carbol-fuchsin 4–5 min., methylene blue 2–3 min.). But when the section is kept in the methylene blue for 10–15 min. the bacilli become at first violet and then blue.

A. R.

Varix: Its Causes and Treatment with Especial Reference to Thrombosis. Bennett (*Lancet*, Oct. 15, 1898) believes that for practical purposes varicose veins may be caused in 4 ways: (1) Congenital causes. (a) Only the subcutaneous veins involved; *e. g.*, the veins of the calf of the leg. (b) Varicose veins with a gross and direct communication with the deep venous trunks. This condition is found about the knee and communicates with the deeper veins in the popliteal space. The congenital cases may not develop until about or after puberty, and the author believes that heredity is a factor. (2) Varices due to obstruction of the blood current by external or internal pressure. As examples of this form he notes the varix from pressure of the gravid uterus in successive pregnancies. (3) Varices due to strain. These cases arise in gymnasts; may result from the violent exercise of football playing, etc. The author cites a case in which the condition was preceded by "a distinct feeling of something having given away." The author believes this to have been a rupture of valves. (4) Cases arising as a result of thrombosis. This thrombosis may follow sprains, injury, inflammation of the veins, etc. Of the dangers incident to varix the author names (1) hemorrhage from bursting of a thin vein, (2) the formation of a thrombus.

Leprosy. Von Düring, of Constantinople (*Deutsche med. Willeusch*, Nos. XX.–XXI., 1898), comes to the conclusion that we should admit: (1) That leprosy is a disease exclusively of man; (2) that it cannot arise spontaneously, and that all cases of leprosy are due to more or less prolonged contact with a leper. He condemns the present tendency toward relaxation of segregation and isolation as preventive measures. He believes that the infectious nature of the disease must be definitely accepted.

A Case of General Infection by the Diplococcus Intracellularis of Weichselbaum. Gwyn (*Phila. Med. Jour.*, Dec. 10, 1898) reported a case of one of eleven patients suffering with cerebrospinal fever in Prof. Osler's wards at the Johns Hopkins Hospital. Male, aged 24, admitted as suffering from typhoid. He had not been feeling well for a few days before Nov. 1st, on which date he was seized with a severe pain in the

back of the neck followed by a chill, nausea, vomiting and fever. The following day he was worse and became delirious. On Nov. 4th his temperature was 100.8° , limbs rigid, spleen palpable, large and firm, tongue coated. Muscles of the neck and back were rigid so that the body could be lifted with the hand placed under the occiput; pulse 140, temperature 100.2° , respiration 44. Swelling and redness of both limbs, right wrist, right knee and several small joints of the hands. On Nov. 5th, purpuric spots about the feet. The swelling increased. Urine albuminous, containing hyaline and granular casts and red blood cells; a slight urethral discharge. While in the Hospital leucocytes increased from 7,000 per cubic mm. to 37,000. On this date lumbar puncture was performed, the fluid obtained was seropurulent and contained the characteristic diplococci. Cultures were obtained from the joint, from the blood, and from the fluid obtained by lumbar puncture. The patient died Nov. 6th. Characteristic lesions of the brain and cord were found and no other organisms were identified.

Infection with the *Bacillus Pyocyaneus*, with a Report of a Case. Eisendrath (*Medicine*, Nov., 1898) reports the case of a woman 24 years of age, with negative family history, who always enjoyed good health prior to her marriage 18 months previous to coming under observation. Shortly after marriage she suffered from leucorrhea, and 13 months later was taken suddenly ill with nausea, vomiting, headache and high fever. Chills occurred irregularly. There was at first pelvic pain followed by diffuse tympanitis. There was diarrhea which was difficult to control. There were extensive pustular eruptions over the breast, back and arm. Urine contained hyaline and granular casts. Some months after the beginning of this attack the patient was submitted to abdominal section. Intestinal coils were adherent. The left ovary was the size of a clenched fist and contained pus; it was removed. Inoculations developed pure cultures of the bacillus pyocyaneus. From the study of this case and reported cases the author concludes that the systemic symptoms present in this case are characteristic pyocyaneus infection. In children the stools are greenish in color and the disease runs a longer course. Point of entry of the organism may not be demonstrable. In more acute cases the lesions induced are vasomotor, local necroses, hemorrhages into the skin, serous and mucous membranes, lesion in the parenchyma of the heart, liver, spleen and kidneys. One of the cases abstracted by the author as examples of pyocyaneus infection in children, appears to possess the clinical characteristics of infantile scurvy.

Diphtheria Bacilli in the Urine. F. Smith, R.A.M.C.D.P.H. Durh., (*Lancet*, Nov. 19, 1898) reports that a guinea pig suffering from inoculations with diphtheria bacilli passed urine containing blood. The animal was killed, opened aseptically and cultures made from urine in the bladder. Diphtheria bacilli were found. A second guinea pig was injected with living culture and killed five hours later. The urine obtained as above was normal in appearance, but developed a plentiful growth of diphtheria bacilli in culture. The importance of these observations cannot at present be accurately weighed. We have been believing that diphtheria bacilli rarely enter the blood, a belief which this experiment goes to disprove. This further goes to establish the possible excretion of living bacilli by the kidney.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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Climate and Health of Hawaii. Lyman (*Med. Rec.*, Nov. 5, 1898) says that no more delightful or wholesome climate exists in any other part of the world. Owing to the insular position of the territory and the peculiar circuit of the currents throughout the Pacific Ocean, the extremes of heat and cold are unknown, and the hurricanes and typhoons that devastate the West and East Indies never occur. Prior to the wars of conquest a century ago, the native population was redundant. Since the advent of Captain Cook that population has steadily diminished, not in consequence of insalubrity of natural environments, but by reason of certain infectious diseases to which the aborigines were utter strangers before their contact with foreigners. Chief among these were syphilis and tuberculosis, which were propagated among the people with fearful rapidity as a consequence of their promiscuously affectionate habits. The introduction of measles from California in 1848 is usually cited as having decimated the population. This statement is not exactly correct. The disease spread so rapidly that nearly every one sickened at the same time, but it was not unusually severe. The natives, however, knew nothing of the proper treatment of the uncomfortable fever, and sought relief in frequent baths in the waters of their mountain streams and alluring surf. Almost immediately they were attacked with inflammations of the respiratory tract and alimentary canal. While thus struggling, a world-epidemic of influenza reached the islands, and attacked every person there resident. Before this infliction had passed away, the Californians sent them some choice specimens of whooping-cough, which started a third epidemic that raged with great severity among the children. Scarlatina was also imported, but did not prevail extensively.

The Cause and Prevention of Typhoid Fever with Reference to the Proposed Metropolitan Drainage Scheme (Hobart). Sprott (*Australas. Med. Gaz.*, Oct., 1898) read before the Royal Society of Tasmania an able and exhaustive paper on this subject. The author records interesting experiments made by Drs. Sydney Martin, Robertson and Gibson. These experiments prove: (1) That the typhoid bacillus is capable of retaining its vitality or multiplying to an enormous extent in certain soils contaminated with organic matter. It may live through the cold winter, to spring into activity again in summer, provided sufficient nourishment is supplied in the form of organic matter. This organic matter may be supplied by beef tea, but leaky drains, midden privies, nightsoil buried in gardens where vegetation is not active, will also supply it. (2) That the typhoid bacillus placed in the earth is capable of invading the surrounding soil and also of coming to the surface. (3) That the organism grows best in a moist,

porous soil (35 grms. per cent.) at a temperature of 37° C. (103° F.), a temperature frequently reached in the Australias, but also it is capable of retaining its vitality at ordinary temperatures. (4) Sunlight and vegetation were also shown to be inimical to the bacillus only where the sunlight was direct and only when the vegetation was active. As to the mode of infection the author thinks that the bacilli may enter our system by (1) inhalation, in the air we breathe; (2) food, including milk, meat, oysters, raw vegetables and fruits; (3) water, including lemonade, cordials and ice creams. The source of infection in connection with a water distribution is the system of surface fire-plugs placed along the streets, if not in the gutters, very close to the side channels. The practice of eating uncooked vegetables, such as tomatoes, watercresses, ettuces, etc., which come in contact with the soil is one of danger. As preventive measures the author considers (1) careful selection of building sites, with good ventilation and plenty of sunlight in our dwellings; (2) subsoil drainage to remove all dampness; (3) paving of all yards to prevent exhalations and soakage; (4) active cultivation in gardens to keep the soil pure; (5) removal of all garbage and destruction of same; (6) a proper system of drainage to carry away all waste product.

SURGERY.

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Multiple Echinococcus of the Abdominal Cavity. Resser (*Medicinskoe Obosrenie*, Nov., 1898) reports the case of a woman in whom a laparotomy, performed for numerous swellings in the abdomen, disclosed about 20 cysts distributed in the abdominal cavity, some of them being attached to the peritoneum and omentum; others, again, were found in the uterine appendages. One was located in the liver, and another between the posterior wall of the vagina and rectum. Owing to the shock produced by the operation which lasted 3 hours, all of the cysts were not removed, and not until the cyst between the vagina and rectum was evacuated and ample drainage provided did the woman completely recover. A. R.

A Case of Aneurism of the Femoral Artery in a Child. An interesting case of aneurism in a child which simulated to a certain extent an abscess resulting from coxalgia is reported by Johnson (*Quart. Med. Jour.*, Oct., 1898). The differential diagnosis was made on the presence of expansile pulsation, a well-marked thrill and bruit, and the presence of heart disease. An exploratory puncture with a very fine aspirator needle was made and a little blood, bright in color, was withdrawn. It was decided to open the sac, clear it out and ligate the ends of the femoral. A provisional incision was made through the abdominal wall to permit digital compression of the common iliac artery. The sac was then opened and

cleared of clot. A temporary release of pressure on the iliac showed the opening in the side of the femoral. An aneurism needle was easily passed above and below the opening and the bleeding checked. The cavity was packed and allowed to fill up with granulations. The author believes the case to have been due to an arteritis resulting from an infective embolus. While no symptoms of malignant endocarditis were present it must be remembered that they have all degrees of virulence. He believes that infective embolus is a very frequent source of aneurism occurring in childhood.

Lymph-gland Juice in the Treatment of Cancer. Basing his theory on the fact that the malignant disease varies in its progressive infection of the lymph-glands and seldom, if ever, invades those lying above the seat of disease on the lymph stream, Snow (*Lancet*, Oct. 15, 1898) advances the theory that these lymphatic glands act not only as filters but also destroy in some way the infecting cells which come to them in the lymph stream and that the final involvement of the gland only occurs when the lymphatic gland has used up all its resisting power in the contest with the disease. He advocates the administration of a lymph-gland juice containing as nearly as possible the physiological elements of the glands in their natural state, hoping in this way to increase the nutrition of the glands and their power to overcome the infecting elements. He has already seen results which make him feel that the theory is not entirely without foundation and that it coincides with the general trend of modern scientific medication which administers to the patient that natural element which antagonizes the disease but is not present in sufficient quantities in the particular individual attacked. He hopes by advancing the theory to arouse the interest of experimental physiologists who can carry on the research in this direction scientifically.

Histology of the Varieties of Appendicitis. Pilliet (*Le Prog. Méd.*, No. 5, 1898) arrives at the following conclusions from a histological study of the various forms of follicular appendicitis: 1. Recurrent appendicitis has its principal location in the follicles. 2. Fecal concretions, which are frequently found in appendicitis, are a result of the appendicitis; they are not formed from the feces and contain no food remnants, they are derived from the mucous secretion of the Lieberkühn's glands; the latter are hypertrophied from their activity. 3. Contrary to the opinion expressed by Ribbert the author holds that the obliteration of the vermiform process is a pathological process which follows follicular appendicitis. 4. Gangrenous appendicitis in which all the coats of the organ are destroyed simultaneously is fortunately of rare occurrence. The perforation extends in these cases over a large area of the appendix. In the neighborhood of the perforation there is to be found a mixture of hemorrhagic infarction and purulent infiltration.

Surgery of the Stomach. In speaking of the progress made in the past two years, before the French Surgical Congress, in the surgical treatment of the diseases of the stomach, Roux (*Gaz. des Hop.*, Oct. 29, 1898) says that a much greater proportion of cases present themselves in time for successful operative interference, both those who come of their own accord and those sent by the general practitioner, and as a consequence the number of exploratory operations, where no relief could be given, has de-

cidedly decreased, while the results obtained by operative interference have been markedly improved. The number of pylorectomies has increased as a consequence in its ratio to the gastro-enterostomies. The former is always considered the preferable operation and early interference makes them possible. Kocher's method of pylorectomy was the one most frequently employed, while the posterior gastro-enterostomy transmeso-colic is the one preferred by this author. Suture is preferred to buttons. In speaking on the same subject, Gallet (*l. c.*) insists that the operation should be done in such a manner that there can be no regurgitation of bile into the stomach, nor of food into the duodenum. This he accomplishes in a rapid manner by making a lateral jejuno-jejunostomy with the Murphy button of small size and a posterior gastro-enterostomy with silk sutures. The intestine between the anastomosis and the point where it is attached to the stomach is divided and the ends invaginated and closed by suture. The passage of bile into the stomach is thus prevented. Jordan (*l. c.*) said that in Czerny's clinic in Heidelberg the Murphy button had been employed with absolute success, since they have confined its employment to the small intestine. When it was first employed they had three deaths from perforation but in the last one hundred cases it had acted perfectly. The button should be pressed very firmly together. Supplementary sutures are not needed. The rapidity of the operation is its great advantage. Triffner (*l. c.*) reported 62 cases, including 50 gastro-enterostomies. Pylorectomy he considers preferable to gastro-enterostomy though it is not possible to employ it as frequently. He employed both the anterior and posterior operations and believes they should be used according to the case, and not with any preconceived idea of the value of either in all cases. He employs sutures uniting the mucous and serous layers separately. Roussel (*l. c.*) described a new method as employed by Doyen for performing posterior gastro-enterostomy. It differed from that of Roux in that the anastomosis was lateral instead of being terminal. The gastro-enterostomy should be, when possible, trans-mesocolic and in the posterior wall of the stomach as it places the orifice in the most dependent portion of the stomach and permits more complete emptying. Monprofit (*l. c.*) reported the results of 19 operations. In 14 for cancer 2 died from the shock of the operation in the first twenty-four hours, the autopsies showed no failure in technique. 10 of the cases were greatly benefited. 2 continued to vomit and apparently received no benefit. 5 gastro-enterostomies performed for chronic gastritis supported the operation well and in all the trouble from which they suffered was relieved. In 9 cases Woelfler's operation gave 5 perfect results, 2 satisfactory and 2 bad. 6 operations by von Hacker's operation gave 5 excellent results and 1 fair. 2 by Roux's Y method were perfect. This author prefers the silk suture. Guinard (*l. c.*) called attention to 3 cases of perforating ulcer of the stomach where the only symptom was a sharp lancinating pain in the epigastric region. They were all young patients who had shown no previous symptoms, all died and in but 1 was the perforation discovered before death. He also presented a woman in whom he had successfully sutured a perforating ulcer of the stomach.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Maxillary Pneumosinus of Cystic Origin. Fremont (*Rev. Heb. de Lar. de Otol., et de Rhinol.*, Nov. 5, 1898), says that the term pneumosinus is due to Lermoyez. Luc describes in the *Archives* for May, 1898, two cases of frontal pneumosinus. Both followed intervention directed to the fronto-maxillary cavities. In the first case there was nasal discharge showing infection; in the second an injudicious insufflation. In both cases there was excess of internal pressure. Here is a case resembling the other two closely, not, however, depending on external and remote causes. The pathogenesis is entirely different. The emphysema is evidently due to the same cause (exaggerated intra-sinus pressure), but in our case the perforation of the cutaneous side of the sinus is produced spontaneously under the influence of a compression prolonged for some time and aggravated by the presence of a benign neoplasm situated on a line with the sinus. The facts follow: [Lec . . . , 42 years old, carpenter, at Mondeville, near Cayen. Inflammation of the lungs at 15 years. No other disease. He had been a soldier for years; had had gonorrhea. Syphilis denied. I could find no trace of it, but the 5 years spent in the service in connection with the maxillary necrosis perplexed me and caused me to institute a line of eliminative treatment which I otherwise should not have done. In October last the trouble began with a terrible toothache with considerable swelling involving the entire right jaw. The swelling began close to the naso-genial fissure on a level with the canine fossa. After 4 days the swelling disappeared rapidly and the parts returned to normal. In December there was a recurrence of the same phenomena lasting 1 day. In February another attack dissimilar to the two preceding. The generalized swelling was absent, on the contrary it was accurately circumscribed to a circular surface 6 or 7 centimeters in diameter. The skin detached from the underlying bone is as if blown up, considerably stretched, thin and translucent, about the size of an orange; after 3 or 4 days it totally disappeared. In April another attack which lasted 6 weeks. The large sized tumor appeared instantly, then disappeared little by little. The same thing occurred frequently. It was then that the patient sought medical aid. A physician incised the tumor, allowing the escape of air which had inflated it. After 2 or 3 days, the lips of the incision healed and the tumor regained its former size. It was at this time that I first saw the patient. He complained bitterly of severe pain in the entire region affected as well as the frontal sinus and throbbing of the left temple. The tumor was spheroidal in shape (6 centimeters in diameter), situated between the external angle of the left eye and the canine fossa. The nasal examination revealed nothing abnormal; no pus in the hiatus. The maxillary and frontal sinus were minutely examined. Heryng's sign negative,

Wohsen Davidson's sign negative, sign of Garel Bruger negative, sign of Robertson negative, illumination of the frontal sinus negative. These confirmatory proofs caused me to admit the integrity of the sinus. Exploration of the region with the finger revealed but one thing—crepitation. Strong compression failed to reduce the tumor's size. A small thin trochar forced into the tumor allowed the escape of air. Compression now considerably reduced the tumor's size but did not entirely efface it. The same illumination tests were employed with negative results as before. But other very important signs appeared. The finger placed perpendicular to the anterior aspect of the sinus could be inserted in a hole about 1 centimeter in diameter. This hole is to the right of the center of a line joining the external angle of the eye and the second molar. Immediately below this hole is a small pyriform tumor quite hard and adherent, as large as a hazelnut and a little flattened. It was the first time that the foramen and tumor were seen. The crepitation subsided. I asked the patient to blow his nose and the large tumor reappeared instantly. Another puncture was followed by a disappearance of the tumor. There is no doubt that we have a perforation of the anterior wall of the maxillary sinus with consequent emphysema. It remains to discover the etiology of this perforation. Specific treatment does not modify the course of the disease. Examination of the teeth put me on the track of the pathogenesis of the lesion. The two first molars had been drawn for a long time, but the extraction was incomplete and the roots are still in the alveolar process. The pain caused by pressure on the gum as well as its appearance shows a periodontitis at this level. Now, the origin of cysts at the roots of the teeth seems to give the key to the lesion. That is to say, a chronic inflammation of the alveolo-dental periosteum causes a stripping of the surface of the root. The result is the formation of a cavity whose contents are serous or purulent depending on the intensity of the inflammation. The wall is made up of the denuded periosteum, thickened, a true cystic membrane. This little cyst developing slowly, forces itself gradually into the bone and remains there (intra-osseous cyst), or it perforates, finally arriving at the periosteum where it develops between the periosteal membrane and the bone (sub-periosteal cyst). This cyst growing constantly in the case under observation on the anterior surface of the sinus perforated it at last by a process identical to that which would happen under the periosteum in a true alveolar cyst. With this idea I drew the two roots. One of the two came easily, the cement was wrinkled; pieces roughened on the surface are elevated, the others rested in the alveolus. In order to extract them complete and avoid forever the emphysema by the increased pressure, I made a large perforation in the diseased alveolus. The border of the gum was anesthetized completely with chloride of ethel, and with the aid of a drill I established communication between the alveolus and the sinus. As I did so a liquid, either serous or purulent, I cannot say which, escaped. I was especially desirous of saving it out of regard for the cystic hypothesis, but the blood prevented me. A stylet introduced into the sinus appeared through the hole on the anterior surface of the cavity and raised the skin. With a curved curette I denuded the borders of this orifice, and to close it, made permanent pressure. The patient suffered no evil effects from this procedure and returned 8 hours afterward. The emphysema had completely disappeared; there was no crepitation; a little pus trickled through the

alveolar opening. The small tumor persisted, as well as the orifice on the side of the sinus, but its diameter was notably decreased. I recommended washing the mouth frequently with strong antiseptic solutions. I saw the patient again 12 days afterward. He was completely cured. There was no opening nor tumor; suppuration had ceased. The alveolar fistula still persisted, very much reduced in size. Two months later he returned with the cure still complete.

Contribution to the Study of Paralysis of the Larynx of Central Origin. Meillon (*Rev. Heb. de Lar. de Otol. et. de Rhinol.*, Nov. 19, 1898). The author's study is divided into two parts: first, an anatomic study of the origin of the laryngeal nerves, and second, an "anatomy-clinic" of laryngeal paralysis. Doctor Meillon relates several cases demonstrating the existence of a cortical center and bulbar projection of the laryngeal nerves and has arrived at the following conclusions: There exists in man a cortical center of the larynx occupying the posterior part of the foot of the third frontal and all of the foot of the ascending frontal convolutions. This center has a unilateral and crossed action. In all of the cases observed the respiratory center is not separable from the phonatory center and laryngeal paralysis was shown in the laryngoscope by the cord being in the cadaveric position. Section of the central laryngeal fibers subcortically or in the knee of the internal capsule produces the same result—total paralysis. There exist reflex centers for the larynx, those of phonation, others of respiration. These extend from the posterior quadrigemina to the superior part of the medulla, their precise locality being still under discussion. There exists a laryngeal paralysis of bulbar origin. It is a complete paralysis of the vocal cord in the cadaveric position. This paralysis is observed in the course of the disease described by Millard Gubler. The prognosis of these paralyses is grave because of the access of suffocation which may terminate the disease (*These de Doctorat*, Paris, librairie Paul Delmer, 1897).

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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The Treatment of Sloughing Corneal Ulcers. Percy Dunn (*Lancet*, Oct. 22, 1898) believes that sloughing ulcers of the cornea are best treated from the first with eserine. The strength of the drug used is half a grain to the ounce, and this proportion is never exceeded. Generally speaking two instillations a day will be found to be sufficient, but if more is considered advisable there need be no fear of pain or irritation from this strength solution. Hot fomentations are absolutely needful, and some antiseptic solution is preferred. Dunn advises chinosol. In addition to the local treatment the patient should have good food in abundance, as well as a preparation of quinine and iron. Nursing mothers affected must wean their infants. Dunn urges the use of the actual cautery (on a surface delineated with fluorescein) in the worst infected ulcers.

Irrigation of the Nasal Duct by a Fountain Syringe. Jones (*Brit. Med. Jour.*, Aug. 20, 1898) described a new method of irrigating the lacrimal duct, *i. e.*, a silver cannula the same size as Bowman's No. 6 probe is passed into the duct immediately after slitting the canaliculus. A head of water 8 to 10 feet is required. The stream is allowed to pass through the nasal duct several times. A boracic acid solution is used, and the length of time for which the solution is passed depends largely on the patient's forbearance. Jones found no difficulty in passing the No. 6 probe into the duct after previously slitting the canaliculus in half its length. This treatment has produced the best of results in many cases of lacrimal inflammation and so-called stricture. It is certainly more rational than the brutal probing now in vogue. It is difficult to understand why intelligent oculists mutilate a delicate canal of such exquisitely fine physiologic function until it becomes a mere fibrous drain-pipe.

Resection of the Cervical Sympathetic in Glaucoma. Jonnesco (*Recueil d'Ophthalmologie*, Aug., 1898) has performed this operation seven times in the last year. The results were an immediate cessation of pain, fall of tension, reduction in the size of the pupil, and improvement of sight when the optic nerve was not already totally destroyed. Jonnesco removes the superior ganglion and makes a premastoidal incision. The technique of the operation is minutely described.

The Use of Formalin in the Treatment of Blepharitis. Moulton (*Jour. Am. Med. Ass.*, Sept. 17, 1898) has used formalin in all his cases of blepharitis. He first carefully corrects any refractive errors, and administers to any local or general condition which may predispose the lid-margins to the disease. Formalin has produced a cure when all other local applications failed. The solutions are made of strengths from 0.2 per cent. to 1 per cent., beginning with the weaker. It must be frequently renewed to secure uniformity of strength. The lid is drawn away from the eyeball, and a small cotton mop dipped in the solution is rubbed gently along the margin of the lid until all the scales and crusts are removed and until the surface of any little pustule is rubbed off. The mop is moistened several times in the solution. The applications are made daily, preferably by the physician to insure thorough cleansing. A little bland oil may be used afterward, or the formalin may be used in oil.

A Sewing Needle in the Liver. Dr. Peters reports in the *Canadian Practitioner* a case where a sewing needle in the bodice of a mother penetrated the body of her child while being caressed and embraced. When two days later an operation was performed the needle was found almost buried in the liver, its eye just within the sheath of the right rectus muscle. It was readily removed, and found to be black in color but smooth. The child recovered.

An Early Sign of Tuberculosis. Lounsberry believes that a constant temperature-elevation ranging from 99° to 101° is the most constant early symptom of incipient tuberculosis. He has been thus able to detect the tubercular element months before any positive physical signs appeared in the chest.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Communication on Extra-genital Syphilitic Infections. Sternthal (*Allg. Wiener Med. Zeit.*, No. 39, 1898) observed fourteen cases of extra-genital chancre, half of which were in women. Seven cases presented the lesion on the lips, which was communicated to them mostly through kissing. The diagnosis was not difficult to make. Chancre on the finger was observed in three instances in midwives and physicians, one of them a dentist. The author recommends that midwives, nurses and all others who wait on the sick and who are suffering from syphilis give up practice during the infectious stage, *i. e.*, for at least two years. Physicians and dentists must refrain from practice until the acute primary stage has passed. In two instances the primary affection of the mouth resulted from dental instruments. In one case the chancre appeared on the tonsil in a woman forty-two years old, the medium of infection being a spoon which she used for administering medicines to her syphilitic husband. In one case the chancre appeared on the pubes. Especially interesting is the case of a young woman who suffered from a chancre of the right breast, resulting from nursing her syphilitic child. This, then, would be an exception to Colles' law.

The Inunction Cure. Schuster (*Klin. therap. Woch'schrift.*, Nov., 1898) considers the inunction treatment of syphilis as the best method of medication. It is entirely painless, thus offering advantages over the injection-method. It does not disturb digestion, as internal medication does, nor is salivation readily induced. Cases not suitable for inunction are patients with irritable skin in whom it produces either a scarlatinoid rash or eczema, patients with a preponderance of hair in whom the rubbing is liable to produce excoriations, and those whose skin is dry or covered with cold sweat. The treatment is begun as soon as syphilis is suspected. The *modus operandi* of the inunction the author ascribes to the volatile property of mercury which is absorbed by the skin in the form of vapor. The use of warm sulphur-baths in conjunction with the inunctions is also very beneficial. To obviate the objectionable features of the ordinary blue ointment the author prefers a soft soap which is made by Neunerdt and Smidt, in Hanover, according to the following formula devised by him.

Hydrargyri depurati,	33½ %
Sapon. oleacei albiss. pulver.,	12½ %
Sebi filtrati,	18 %
Adipis filtrati,	36 %

This soap mixes easily with water, stains the skin but slightly, and is easily washed off in the course of a few days.

Bottini's Galvano-Caustic Treatment of Prostatic Hypertrophy—A Preliminary Report of 3 Cases. Carleton (*Med. Times*, Dec., 1898), having performed the usual operations for prostatic enlargement with variable success, has finally adopted the Bottini's galvano-cautery incision, which, he claims, invariably results in a cure. The objections to the complex and cumbersome instrument were removed by the modification of Freudenburg, which makes the operation comparatively simple. After describing minutely the instrument and its accessories the author describes the operation which, briefly, consists in making three grooves with the galvano-cautery incisor, one in the prostatic urethra towards the symphysis, a similar towards the rectum, and a third in the larger of the lateral lobes. The operation is done under cocaine anesthesia and requires no further attention, the patient being up in from two to four days. The author reports 3 cases in which the operation was successfully performed. He finally concludes that from his experience and investigation of the subject the Bottini operation will be the one of choice for prostatic hypertrophy, when the fibrous elements predominate. It will give the best results when retention of urine of prostatic origin has not been complicated by cystitis; being particularly indicated for the contracted fibrous prostate.

Antistreptococcus Serum in the Treatment of Primary Venereal Sores and their Complications. Moore (*Brit. Med. Jour.*, Nov., 1898) was led by the analogy existing between streptococcus infection and chancreoid to try the injection of antistreptococcus serum in the latter affection. He usually injects from 5 to 10 c. c. subcutaneously into the inguinal region corresponding to the inflamed gland. In 48 cases of acute inflammatory bubo, subjected to this treatment suppuration took place only in 7. In one bad case of phagedenic chancre he was enabled by repeated withdrawal of the serum to assure himself that the favorable results were produced by the latter and not by the other medication employed. The author finally concludes that if 5 c. c. of the serum are injected subcutaneously into each inguinal region in cases in which inflammatory bubo is likely to develop, it will prove a good prophylactic measure and assist in healing the chancreoid. If inflammatory bubo has already developed, and symptoms have not been present more than 48 hours, 10 c. c. will cause resolution in the majority of cases. If pus has formed the serum may possibly limit the extension of the suppuration.

Inheritance of Syphilis. Finger says there is undoubtedly a purely paternal as well as purely maternal syphilitic inheritance. The purely maternal syphilis may be transmitted to the fetus through the ovum or may be post-conceptional—transmitted through the placenta. The former is not proven, but only acknowledged as probable by analogy with the transmission through the semen, while the latter has been proven by a number of exact clinical observations. Syphilis in the mother, even when acquired in the last months of pregnancy, may pass to a fetus conceived while both parents were sound.

GYNECOLOGY.

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After-Effects of Surgical Procedure on the Generative Organs of Females for the Relief of Insanity. James Russell (*Canadian Practitioner*, Oct., 1898) believes that while gynecology has its relation to psychiatry among the insane just as it has among the sane for the relief of physical distress, yet to extol it as a great curative method in the treatment of insanity is nothing short of absurdity. Common sense, as well as statistics, proves that sexual disorders in women cannot be such a prolific cause of mental disease as the psycho-surgical gynecologist would make us believe. Russell is of the opinion that surgical interference should be resorted to with the insane as with the sane only when there is a physical indication for operation, but seldom or never as an experimental procedure for the relief of insanity.

Secondary Abdominal Operations. Malcolm (*Ind. Med. Record*, Nov. 1, 1898) reports twenty-six cases in which an abdominal operation had been performed a second time. In the first eight of the series the second operation was performed on account of a return of the disease after a period of good health. The second group consists of five cases in which the first operation was insufficient to effect a cure. In the remaining thirteen cases the second operation was required on account of some complication arising as an immediate or remote consequence of the first. Among the causes may be found ovarian tumors arising in the second ovary after the removal of the first; rupture of the abdominal wound; slipping of ligatures; and in one case the inverted fundus of the uterus had been mistaken for a polypus and removed by means of scissors.

Ovariectomy. Ruth M. Thomson (*China Med. Missionary Jour.*, Oct., 1898) reports the successful removal of a large multilocular ovarian cyst. In March the patient, a married woman aged 28 years, entered the Canton hospital; she was anemic, the abdomen greatly distended, limbs edematous, and lying down caused great discomfort. Operation March 30th. The initial incision was $2\frac{1}{2}$ inches in length, the sac was punctured and 70 lbs. of light brown fluid flowed out. There were extensive adhesions between the intestines, abdominal walls, and the right broad ligament; the incision was enlarged and the sac removed; the pedicle, $3\frac{1}{2}$ inches in length, was ligated, cut and Paquelin cautery applied; the abdominal cavity was irrigated with saline solution, and drainage introduced. Although the patient was very much shocked, reaction occurred and the convalescence was uninterrupted.

Moot Points in the After-Treatment of Cases of Abdominal Section.

1. Posture. Martin (*Med. Press and Circular*, Nov. 2, 1898) does not

believe the patient should be kept rigidly on her back for 48 hours after operation, but should be permitted to lie in any attitude that is most comfortable to her, and he allows the nurse to turn her from time to time. 2. Dressings should be of a simple character. He covers the incision with a pad of iodoform changed at the end of 24 hours, after which it need not be disturbed for a week. 3. Sutures. He uses the interrupted silkworm-gut suture, passing it through the whole abdominal wall, and let the sutures remain in from 12 to 14 days. 4. Drainage. "When in doubt don't drain." He prefers iodoform gauze to the glass or rubber tube; and, if possible, drains through the posterior vaginal fornix. 5. He always gives a dose of morphia at the close of an abdominal operation, either hypodermically ($\frac{1}{4}$ gr.) or by suppository ($\frac{1}{2}$ gr.). This single dose of morphia is not sufficient to paralyze the bowel or to interfere with the purgative treatment of peritonitis, should this complication subsequently occur. 6. Purgatives withdraw the fluid from the congested portal veins, promote absorption, mechanically remove the excreted toxins from the intestinal canal, and by stimulating peristaltic movements combat the tendency to paralysis of the bowel, diminish the tendency to intestinal adhesions, and mechanically remove flatus. 7. Dietary. Martin is satisfied that the early administration of fluids is not only merciful but does good; it diminishes shock and restlessness, fills the depleted blood vessels, and, by washing out the kidneys, helps to remove toxins from the system. 8. Date of getting up. If there are no complications, the patient may sit up in bed on the 14th day, get out of bed on the 15th or 16th day, and leave the hospital during the fourth week. 9. Belt. Patients who have undergone abdominal section should wear a well-fitting belt for at least two years after operation. In conclusion, no hard or fast rule can be laid down which applies to all cases. Every case must be treated on its own merits.

Stones in the Ovary. Ries (*Annals of Gyn. and Ped.*, Nov., 1898) reports observations made in three cases seen in one year. The fragments of two of the ovarian calculi were submitted to qualitative analysis and both were found to be composed of a mixture of organic and mineral compounds; the former consisted chiefly of fibrous materials with minor quantities of fat and cholesterin, while the mineral matter was made up of the carbonates and the phosphates of calcium and magnesium, with unimportant traces of chlorides and sulphates, presumably of sodium and potassium. The convolutions of the surface of the stones resembled exactly inside, as well as outside, those of the corpus luteum and undoubtedly took their origin in simple corpora lutea.

Report of the "Congres de Gynecologie, d'Obstetrique et de Pedietrie" at Marseilles. Prof. Pinard in his opening address (*Gaz. de Hôpitaux*, 1898) spoke on the close relationship of gynecology, obstetrics and pediatry, all seeking both the preservation of the individual and the continuation of the race. It is necessary to guard jealously the health of both mother and child, but it is especially from the infant that one hopes for the improvement of the race. Prof. Pinard said the physician ought to concern himself with the infant before its procreation. This assertion may cause a smile, but nothing is more serious. That hereditary syphilis may be avoided, the attainted parents should have preventive treatment. It is necessary to prove to them the importance of such treatment, to show them

that reproduction is a crime unless they are willing to submit to rigorous therapeutics. That is not all, there is a terrible flood which rises and advances most threateningly; alcoholism with its sad consequences, follies and all sorts of degeneracy. From such evils it is the duty of every physician to defend the race. The act of procreation is of such importance that it should never be left to chance. Every honest man ought to prepare himself for it. If each one is permeated with these ideas essential for the nation, we shall soon see arise a commonwealth of healthy, vigorous citizens, seeking always liberty and progress.

OBSTETRICS.

UNDER THE CHARGE OF

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Pan Hysterectomy. Brewis (*Scottish Med. and Surg. Jour.*, Nov., 1898) reports a case of total hysterectomy during pregnancy for rapidly growing fibro-myomata. On operation there was found a hard tumor united to the right cornu of the uterus by a pedicle two inches long. The lower portion was composed of the uterus enlarged to four months. Projecting under the peritoneum were a number of small fibroids. On the left side of the corpus uteri was a round tumor which would have been a serious barrier to delivery had the patient gone on to term. Myomata and uterus were removed, and the patient made a good recovery. The rapid growth of the tumor and the pain pointed to malignancy. Such was not the case. Modifications of the usual operation were (1) using clamps on the uterine arteries; (2) making the opening of the posterior fornix not into Douglas' pouch; (3) stitching the anterior and posterior flaps of peritoneum over the clamp and gauze, thus shutting off the peritoneal cavity from the vagina.

Operation for Extra-Uterine Pregnancy at Full Term. H. C. Dalton (*Med. Rev.*, St. Louis, Nov., 1898) reports a case of extra-uterine pregnancy operated on at full term. This was one of those rare cases in which both mother and ovum survived tubal rupture and proceeded to the end of gestation. The only reason for delay in operating was the good condition of the mother. Dr. Dalton is of opinion that there can be no advantage in waiting for the full term of pregnancy. Such a course involves danger to mother and the prospects for the child do not warrant such delay.

Differential Diagnosis Between Extra-Uterine Pregnancy and Early Abortion. H. N. Vineberg (*Med. Rec.*, New York, Nov. 5) gives his experience for the past few years in the study of extra-uterine pregnancy. The condition that it is usually mistaken for is abortion. So also are cases

of abortion mistaken for ectopic gestation. In a series of cases the most constant symptoms were fainting spells, attacks of pain, irregular uterine hemorrhages. The physical examination greatly aids the diagnosis. There is one condition where a diagnosis is particularly puzzling; this is in cases of elongated cervix with a displaced uterus. These are readily mistaken for cases of extra-uterine pregnancy except by the experienced.

Mastitis Treatment by Bandaging and Rest. J. B. Jackson (*Amer. Prac. and News*, 1898) gives an experience of 14 years in the treatment of mastitis. The usual methods are mentioned, but particular stress is given to rest and bandaging. A careful study was made of the cat, bitch and ewe. These animals are often deprived of their young and yet mastitis is singularly rare among them. Observation leads to the conclusion that rest is the most important element in the treatment. Rest is secured by the aid of a bandage best applied to the breasts in a figure-of-eight fashion.

Treatment of Placenta Previa by Induction of Labor and Version. M. Fournier (*L'Obstétrique*, 1898) reports his experience with cases of placenta previa. In the last 3 months of gestation his treatment consists in the induction of labor and version. Two principles are laid down in support of this treatment. First, unless these cases are interfered with, the patient runs a great risk and may die from loss of blood. Second, if the uterus is empty it will contract upon the vessels and the danger from hemorrhage will be removed. To be effectual, treatment must be prompt and under rigid antisepsis.

The Importance of Artificial Abortion with Treatment of 60 Cases. At the French Congress for Gynecology, Obstetrics and Surgery, held at Marseilles, Oct., 1898 (*Klinisch-therapeutisch Woch'schrift*) Hucklenbroich read a paper on the importance of abortion and the treatment of 60 cases. Of this number abortion was induced in 29 cases, 26 for narrow pelvis, 3 for vomiting of pregnancy. One patient died of septic peritonitis, the others recovered fully. The method employed was that of Krause, *i. e.*, the introduction of a stiff bougie surrounded by iodoform gauze tampons. The tampons were renewed, when necessary, in 24 hours. In most cases, however, pains came on in 1 hour. Of the 49 children born alive, 22 died shortly, showing the high mortality in these cases.

Hydrotherapy in Stomach Diseases. Dr. G. D. Kahlo is of the opinion that water ranks first among the therapeutic agents. Cold applications, he says, are antiphlogistic, and sedative when prolonged. They are indicated in acute gastritis, vomiting and hematomesis. On the other hand hot applications are indicated in gastralgia, hyperesthesia, gastric ulcer and chronic gastritis.

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PHILADELPHIA, DECEMBER, 1898.

Hereafter the business management of the INTERNATIONAL MEDICAL MAGAZINE will be conducted by Messrs. E. B. Treat & Co., of New York, the well-known publishers of the *International Medical Announcements* and other works. The editorial control will remain as at present and our efforts will be redoubled to make the INTERNATIONAL the best all-around medical monthly.

The unavoidable increase in specialism and the resulting multiplication of specialists are in some respects injurious to general practitioners. Patients of means and the over anxious ones in all the walks of life are prone to become restive and seek extra advice from physicians reputed to be unusually skillful in the diseases from which they believe themselves to be suffering. This is true not only of those who are ill in bed, but even more so of walking patients afflicted with chronic maladies. The former cannot be gratified in this respect except by a formal consultation, the desire for which is made known to the family physician; but the walking patient very often says nothing about his desire as to further advice, but goes straightway and gets it by calling upon some specialist at his office. In the case of such a universally recognized specialty, as that of the eye, it is now well understood that the majority of persons in cities select their own ophthalmologists as they do their dentists. This, of course, is not as it should be. The family physician should first be consulted concerning everything pertaining to the health or physical well-being of those under his charge and recommend a specialist when one is needed.

The reprehensible tendency of the laity to decide these matters for themselves is possibly due in part to the fact that many practitioners

rarely suggest a consultation even in their most stubborn and difficult cases until urged by the patients or their friends to permit one and then sometimes interpose objections. The most successful physicians we know never object to a consultation, though usually insisting when possible upon their right to select the consultant. To protest against meeting another physician in a case is usually impolitic and indefensible, especially in cities where ethical consultants who are in no sense rivals, can always be had. It is apt to lessen confidence and lead (in chronic cases at least) to surreptitious visits to the offices of men who are not likely to be as able or careful of the interests of the family physician as the specialists whom the latter would have recommended.

There are two obvious remedies for this growing habit among the laity of running off to specialists without the consent or knowledge of their usual medical advisers. The first is to have the family physician master as much as possible of the newer lore in all the branches of medicine so as to be able to treat with a large measure of skill and success most of the cases that come before him without the need of consultations. Not that it will be practicable for him to learn, with ever so much pains, to do as well in every one of the various departments into which modern medicine has come to be divided, as some of the men who have had the best special training and a larger experience in them. It would be absurd to expect the most accomplished general practitioner besides attending to all his obstetric and pediatric work, his fevers and influenzas and pneumonias, along with all his ordinary general surgery major and minor, to be able at the same time to perform skillfully abdominal sections and intralaryngeal operations, or to keep up perfectly with all the most recent advances and discoveries in the abstruse subject of neurology or of digestion and assimilation. But by taking occasionally during his dullest season a course at some polyclinic, buying books liberally and reading regularly a number of the best medical journals, he ought to be able so to perfect himself in his art that a very large proportion of even his chronic cases could be successfully handled without the help of specialists. Failing the time or money to do all these things, if he takes and reads carefully the *INTERNATIONAL MEDICAL MAGAZINE*, he will go far toward accomplishing the same result. Our system of teaching the most important and practicable features of the specialties by means of Talks to General Practitioners is designed to meet this very want.

The second remedy is never to try to dodge a consultation but rather to welcome one whenever it would be of advantage to the patient.

When the ailment is one like eye-strain which men in general practice as a rule are not expected to understand or treat; when it involves a surgical operation which the physician has never done, or a difficult chemical analysis such as that of the stomach contents, which he feels he is not equal to; or when it involves serious complications of any kind as to which he knows that the unusual knowledge and skill of a specialist would be

very desirable, he should promptly seek a consultation with some confrere concerning whose loyalty and ability there can be no question. We place loyalty or strict ethical conduct before ability, because there are consultants enough in every department of medicine who besides being competent are thoroughly careful always to protect in any contingency the interests of the family physician.

The notable discussion on the treatment of diseases of the stomach in the Section of Pharmacology and Therapeutics at the last meeting of the

**A Symposium on
the Treatment of
Gastric Diseases.**

British Medical Association brought out strongly the fact that the United States have become a very important center of activity in this special field. George Herschell opened the discussion with a thoughtful and valuable paper in which he gave generous recognition to the work of our American specialists. He drew largely upon Hemmeter's great work, which he seems to have studied well and with advantage, quoting in full the latter's excellent summary of the indications for what is described under the title of "gastric massage," and for what Herschell himself calls "massage of the stomach," though a more correct term is massage of the abdomen, since in normal conditions a very small part only of the stomach is accessible to massage, about four-fifths of it being behind the ribs and sternum. It is the large and small intestines which occupy in health most of the region popularly, and especially by women, designated as the stomach. By the way, there is a peculiar appropriateness in this misuse of the word by the weaker sex, since the stomachs of the majority of civilized women, as a result of their dress and inactive habits, encroach decidedly upon the domain of the intestines and occupy a large part of the space which belongs to the latter.

Herschell did not mention the important contraindications to massage of the abdomen given in Hemmeter's book, and evidently had not seen the fuller list of such contraindications, including hyperchlorhydria, which were contained in a communication to the *INTERNATIONAL MEDICAL MAGAZINE* by its present editor in January last, though the entire paper was republished shortly afterward in the *Medical Press and Circular* of London.

It is a hopeful sign of the times that in England and America, as well as in France and Germany the non-medicinal treatment of gastro-intestinal diseases is coming more and more into prominence. In Herschell's paper stress was laid upon the following agents as generally useful: Electricity, massage and mechanical therapeutics; hydrotherapeutics and local treatment of the stomach by lavage, spray, douche, or the gyromele of Turck. The author strongly recommended galvanism to the nucha and to the ganglia of the sympathetic and vagi in the neck with one pole over the solar plexus for atonic conditions of the stomach. He makes the application as follows:

"The patient is placed upon his back upon a couch, and the negative electrode applied to the nape of the neck, the anode being placed upon the epigastric region. Both electrodes are flat flannel-covered plates, having each an area of 12 square inches, and remaining stationary during the application, which consists of from 3 to 15 m.a. passed for from five to ten minutes. The electrode is then removed from the nape of the neck, the rheophore attached to a 3-inch disc electrode, the epigastric plate remaining in position. The current is then reversed, and the disc applied for one or two minutes in succession to each of the ganglia of the sympathetic in the neck, a current strength of 1 or 2 m.a. only being employed."

The author prefers the above method to intragastric electrization. Another wrinkle seems worthy to be described in his own words:

"I will take this opportunity of drawing your attention to a special form of electric application which I have recently found to be very useful in the treatment of atony of the bowel and constipation. It is a primary coil, such as is constructed for giving faradic baths, and not only is wound with very thick wire, but is capable of giving very slow interruptions. It appears to me to really set up peristaltic action in the intestines. I have on several occasions seen its application cause an immediate stool. It also acts quite as efficiently as massage and muscular exercises in restoring tone to the abdominal muscles. In using it I place an indifferent electrode on the buttocks, and apply the other pole with a roller electrode over the abdominal muscles and over the intestine following the curve of the colon, and using interruptions of from 120 to 200 per minute. It has also given good results in cases of atony of the stomach."

Ewald was a guest of honor at the meeting and his conspicuous part in the discussion has been hitherto referred to in the *INTERNATIONAL*. He emphatically seconded the remarks of Saundby as to the efficacy of rest in bed with massage and went a step further in adding his belief that for many stomach diseases, especially those of nervous origin, the best way to treat them was to send them away from home to a suitable sanatorium.

Turck, of Chicago, was also present, and his contribution to the subject included an interesting survey of the various methods now in vogue for the treatment of gastric myasthenia, ending with a description of his own ingenious contrivance for pneumatic gymnastics.

The names of the two most distinguished stomach specialists of London are missed from the number of those who participated in this extraordinary discussion. We refer to Professor Sidney Martin, author of the leading English work on diseases of the stomach, and Dr. W. Soltau Fenwick, who is well known for his valuable writings on digestive disorders in both adults and children. They would have made the brilliant galaxy complete.

A marked copy of the journal called "*The New England Anti-Vivisection Society Monthly*," which has been sent us, is filled with the usual

The Anti-Vivisection Humbug. drivell with which the country is flooded periodically by these misguided fanatics. It is a tempting theme for editorial sarcasm, but why waste arguments or words of any kind on

people who cannot reason? Physicians, who alone read medical journals, do not need instruction on this subject. With the exception of an exceedingly small sprinkling of intellectual weaklings they are in as little danger of being infected by the maudlin sentimentality which would refuse to make use of animals with all humane precautions to relieve human suffering, as they are of apostasizing into Christian Science or Osteopathy.

What is needed to save the poor gullible public from the consequences of all these silly isms and erratic delusions is to have appointed regularly a committee of scientific medical writers whose duty it shall be to show them up in the lay press. It is necessary to fight the devil with fire and on his own ground. It is quite useless to expose such lunacy in our medical societies or medical journals.

Dr. William Ewart delivered the series of lectures before the Harveian Society of London on the evenings of December 1st, 8th and 15th. His first lecture on "Disease, its Treatment and the Profession of Medicine in 1899," which we find in the *Lancet* of December 17th, is in a very interesting vein. It is full of striking thoughts felicitously expressed. Under the sub-head of "Medicine Vindicated," the lecturer, while recognizing "the brilliant record of surgery," holds that "the achievements of medicine have been unnoticed or minimized." His view is that while surgery has been more successful in making cures of individuals, medicine has done more in the way of protecting whole communities from decimating diseases such as typhus fever, smallpox, cholera, etc.

**The Harveian
Lectures.**

The present number of the *INTERNATIONAL* gives an approximate idea of what our new system of "Talks to General Practitioners" was intended to be. Professor Montgomery presents another contribution to his admirable exposition of the commoner gynecological affections. Professor J. D. Thomas, of Pittsburg, begins a course of short practical lectures on venereal diseases. Professor Kyle comes forward with a scholarly discussion introductory to a series of talks on the more important diseases of the nose and throat; and the editor discusses the diagnosis of the boundaries and motor power of the stomach. Dr. Pyle will begin in the February number a series of talks designed to instruct general practitioners in the diagnosis of eye strain, faults of accommodations, etc.

Our Talks.

BOOK-REVIEWS.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. Playfair, M.D., LL.D., F.R.C.P., Emeritus Professor of Obstetric Medicine in King's College, London. Examiner in Midwifery to the Universities of Cambridge and London. Seventh American from the ninth English edition. In one very handsome octavo volume of 700 pages, with 207 engravings and 7 full-page plates. Cloth, \$3.75, *net*; leather, \$4.75, *net*. Lea Brothers & Co., Publishers, Philadelphia and New York.

This work has justly claimed the attention and won the admiration of students and practitioners for the past twenty-one years. The present edition contains all the well-established facts of obstetric practice, and we note brief comments on most of the relatively recent studies such as symphyseotomy. Dr. Playfair gives to us the benefit of his long experience and ripe scholarship.

The chapters on "Conception and Generation" have been thoroughly revised by Dr. T. U. Eden, well known by his investigations in this particular field.

The ever-increasing fund of bacteriological knowledge has made it necessary to revise former statements of the bacteriology of the vaginal secretions and deciduoma malignum.

For accuracy and completeness, for lucid style and practical advice, this new edition is highly recommended.

HUMAN ANATOMY. A Complete Systematic Treatise by Various Authors, Including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A. and M.B., London; Senior Surgeon to the Middlesex Hospital; Examiner in Surgery in the University of London, etc. Illustrated by 790 woodcuts, over 200 of them printed in colors. Second edition, revised and enlarged. Philadelphia, P. Blakiston's Son & Co. 1898.

A prominent southern physician, while discussing a paper on the use of chloroform in labor before the Section of Obstetrics of the American Medical Association some years ago, waxed eloquent as he described what a wonderful blessing the anesthetic is to women in mitigating the pangs of childbirth. At the climax of his impassioned speech he told of a woman who having brought into the world nine children without any such help, had chloroform administered while in labor with the tenth, and thereupon declared that she only wished she could have the nine all over again so as to be able to take chloroform with every one. After looking through this splendid work on the subject we would almost be willing to be obliged to study our anatomy all over again with such a wealth of graphic illustrations to help us. The later editions of the standard anatomies, which all the older physicians of the present had to depend on in their student days, have been greatly improved, but they are nothing like so fully and satisfactorily illustrated as Morris' work, while no better, at least, in the letter-press descriptions.

In this second edition some new cuts and a description of the skin by Mr. Wm. Anderson have been added. A new and valuable section on "Vestigial and Abnormal Structures," by Dr. Arthur Robinson, closes a volume which is in every way a most creditable specimen of the book-maker's art.

THE PHYSICIAN'S VISITING LIST FOR 1899. Philadelphia, P. Blakiston's Son & Co. 1898. Price, \$1.00.

The old Lindsay & Blakiston Visiting List is the one with which many of us began our practice and it is one of the most convenient and satisfactory ever devised. It has now reached its 48th year.

A POCKET MEDICAL DICTIONARY. By George M. Gould, A.M., M.D. Philadelphia, P. Blakiston's Son & Co. 1898. Price, \$1.00.

This is a revised and enlarged edition of a justly popular little volume. It

now contains over 21,000 words, besides numerous valuable tables. It is remarkably full and complete considering its diminutive size, yet the words are all printed in prominent, bold-faced type, and the corners of the book are rounded off so that they cannot become dog-eared. Dr. Gould is foremost among our medical lexicographers and this pocket dictionary is one of his best things.

A COMPEND OF OBSTETRICS. By Henry G. Landis, A.M., M.D. Revised and Edited by Wm. H. Wells, M.D. Philadelphia, P. Blakiston's Son & Co. 1898. Price, 80 cents.

This sixth edition, illustrated, is not much changed from former ones. A few subjects, however, have been enlarged and some additions have been made. Such compends are of service to students and the elementary question-and-answer form of conveying information seems to meet their needs.

ON THE STUDY OF THE HAND FOR INDICATIONS OF LOCAL AND GENERAL DISEASE. By Edward Blake, M.D. London, Henry J. Glaisher. 1898.

One would not have believed that so much of interest and importance could have been found to say about the hand. The author in his introduction narrates that on the rare occasions when a European physician is permitted to prescribe for a female member of any Mohammedan family of distinction, the only part of the patient which he is permitted to see is the hand, which is thrust for that purpose through a narrow opening in a curtain. We should think Dr. Blake's book would be indispensable to physicians who practice medicine in such countries. And most doctors in all countries could learn much of value from it. This little monograph contains 45 octavo pages besides a copious index, and is bound inexpensively in heavy paper.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS AND PHARMACOLOGY. Edited by George Frank Butler, Ph.G., M.D. Second Edition, revised. 1898. Philadelphia, W. B. Saunders. Price, \$4.00, net, cloth; \$5.00, net, sheep or half morocco.

The manner of arrangement of this book, its clearness and conciseness, make it most valuable to both student and practitioner.

Each drug has its origin, description and properties, dose, antagonists and incompatibles, synergists, physiological action, therapeutics and mode of administration given in order under its own head and in proper class.

It possesses valuable illustrations explaining the reflex actions of nerves and half-tones showing animals under the influence of poisonous doses of certain drugs.

The chapter on serum therapy is short, concise and thoroughly comprehensible.

A TEXT-BOOK OF PATHOLOGY. By Alfred Stengel, M.D., Instructor in Clinical Medicine in the University of Pennsylvania; Professor of Clinical Medicine in the Woman's Medical College; Physician to the Philadelphia Hospital, etc. N. B. Saunders & Co., Philadelphia. Pp. 948. Price, cloth, \$4.00; half morocco, \$5.00, net.

When one has finished reading the Huxley lecture recently delivered by that modern father of pathology—Virchow—some conception is gained of the important bearing pathology has upon the progress of medicine.

If we know by what law faulty katabolism is to be carried on in disease we could tell the ultimate result—whether life or death would ensue. If we knew the essential pathology which controls all functional and organic diseases we could build up better the science of therapeutics. Wood has stated: "Tell me the pathology and I will tell you what to give." The progress of medicine, therefore, in great part, depends upon those whose knowledge is gained by examination of the lesions of the body post mortem.

We then cannot have too many systems of pathology provided they are good ones. This text-book of pathology by Stengel is therefore most welcome. It strikes a happy medium between the older editions of Woodhead and the more

recent one of Ziegler in two volumes. This is so much more in favor of the work of Stengel who has brought all the facts together within the cover of one book. The subject of pathology has made such rapid advances that "technique," formerly introduced, is now ruled out. Pathological technique has now become a study in itself and already large volumes are written upon that subject alone. This fact entails more expense upon those who desire to pursue this branch of medicine and it is to be regretted that a few words bearing on this topic cannot be inserted in later works on pathology without sacrificing valuable space.

This book presents the subject in precise words not too lengthily, but just of sufficient terseness that the meaning is easily comprehended without undue mental effort. In this respect it may be said that an intricate subject is made quite simple. The book divides the subject into two parts: I., General Pathology, and II., Special Pathology.

Part I., begins with the Etiology of Disease, Bacteria, Parasites, etc., Diseases of Nutrition and Metabolism, Disturbances of the Circulation of the Blood, Retrogressive Changes, Inflammation, Progressive Tissue Changes, Diseases due to Bacteria, Parasites, etc.

Part II., takes up Pathology of the Blood, Diseases of the Lymphatic Tissues, Diseases of the Circulatory System, Diseases of Respiratory Tract, Diseases of Gastro-Intestinal Tract, Diseases of Ductless Glands, Diseases of Urinary Organs, Diseases of Reproductive Organs, Diseases of Bones, Joints and Muscles, and Diseases of the Nervous System.

The subject of "Fever" is condensed into three pages, the author dividing it into *definition, nature, etiology, pathological results and conservative effects.*

Thrombosis and embolism are admirably treated. The subject of air embolism remains unsettled, for, as the writer states, while small particles of air occasion no serious disturbance, sudden death may ensue from larger quantities. "Amyloid Degeneration," which excites much attention among pathologists, is defined as: "The appearance in the tissues of amyloid material; whether formed *in loco* or deposited is not quite clear. Amyloid seems to be a combination of chondratin-sulphuric acid with a proteid." "Inflammation" occupies 15 pages. The etiology of carcinoma remains obscure. As one would expect from this author, diseases of the blood receive full and fair attention. Bacteria and bacterial diseases occupy 84 pages. Tuberculosis is defined as being an *infectious and contagious* disease.

The book is to be commended for the large number of illustrations, many of which are new, thus aiding in making technical explanations quite plain as well as producing a lasting impression upon the student. Numerous colored plates are also inserted, I. to VII., inclusive, which take high rank in work of this kind. While tube casts should and do find a place in works on pathology, those on pages 582 and 583 would seem to be anomalies rather than those most frequently found. The writer preserves simplicity in spelling, holding to leukocyte, noncontagious and endartery, seemingly to preserve euphony and to save conjunction.

The book is printed on good paper in convenient type, has a voluminous index, shows unmistakable evidence of a careful review and is to be recommended for both student and teacher.

WOLDERT.

THE TREATMENT OF SKIN CANCERS. By W. S. Gottheil, M.D. New York, International Journal of Surgery Co.

In this little book Dr. Gottheil treats briefly of the causes of cancer, its pathology, its various forms as they occur upon the skin, its diagnosis and treatment, and concludes by giving some illustrative cases. On account of the author's experience as a practitioner of dermatology his views on treatment are of particular interest. Dr. Gottheil dismisses all forms of internal treatment as useless and says that local treatment is the only one to be seriously considered. He goes over the various plans of local treatment generally in use and also gives some which are not so well known. In a résumé of the subject he says that in the majority of cases caustics are best, as they give the best results with the least liability to return. Excision is reserved for those exceptional cases in which from location or extent the caustic treatment is inapplicable.

Arsenious acid is the safest, surest and best of the caustics at our disposal, and seems to have a specific selective action upon the cells of the new growth. Pyrogallol may be employed in the most superficial cases. In cases involving the skin alone arsenic should be used after curetting in the form of Marsden's paste. Where the mucosæ are also or solely affected, arsenic can be used by the method of interstitial injection of Hue, or as a paint as recommended by Cerny & Trunecek. The galvanocaustic paint, the caustic potash stick and the chloride of zinc may also be employed. Cutaneous carcinoma, early and vigorously treated by the caustic method, is a very manageable disease and of good prognosis.

A. V. H.

A CLINICAL MANUAL OF SKIN DISEASES. With Special Reference to Diagnosis and Treatment for the Use of Students and General Practitioners. By W. A. Hardaway, A.M., M.D., Professor of Diseases of the Skin and Syphilis in the Missouri Medical College, St. Louis, etc. Second Edition, revised and enlarged, with 42 Engravings and 2 Plates. 1898. Phila. & New York, Lea Brothers & Co.

Among the numerous handbooks on diseases of the skin published in this country during the past few years, this work of Hardaway's is distinguished by its succinct thoroughness and its satisfactory character as a work of reference. As a book to lie on the practitioner's table it is convenient because of the clear and full directions for diagnosis and treatment, and its classified arrangement makes it valuable to the student preparing for examination.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE FOR USE IN TRAINING-SCHOOLS FOR ATTENDANTS AND NURSES AND IN MEDICAL CLASSES. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital for Nervous and Mental Diseases, Flint, Mich.; Formerly Medical Superintendent of the Eastern Michigan Asylum. Second and Revised Edition. Pages ix+116. Extra Cloth, \$1.00, net. The F. A. Davis Co., Publishers, Philadelphia; New York City and Chicago.

The good old times when the mildly insane were allowed to run about for the amusement of the populace while the dangerous cases were kept under lock and chain like wild beasts, is happily gone. At present, those of unsound mind are recognized as mentally sick, and their treatment is both humane and scientific. The greater part of the treatment devolves upon the attendants, and principally for them was this little volume written. In a brief but comprehensive manner the author lays down the fundamental principles of psychology and the rules for the management of cases. The definitions are simple, and the examples very illustrative. It is especially intended as an aid in the training-schools. A second edition has been found necessary to meet the demand for this valuable primer. To the publishers is due credit for the excellent manner in which their part of the work has been done.

A. R.

PRACTICAL URINALYSIS AND URINARY DIAGNOSIS: A MANUAL FOR THE USE OF PHYSICIANS, SURGEONS AND STUDENTS. By Charles W. Purdy, M.D., LL.D (Queen's University); Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys;" also of "Diabetes: Its Causes, Symptoms and Treatment." Fourth, Revised Edition. With Numerous Illustrations, including Photo-engravings and Colored Plates. In one Crown Octavo Volume, 365 pages, bound in Extra Cloth, \$2.50, net. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia; 117 W. Forty-second St., New York City; 9 Lakeside Building, 218-220 S. Clark St., Chicago, Ill.

By this time the excellent manual before us is so well known to most of the practitioners of our country that a review can only be a repetition of the most favorable comments expressed by the critics on the previous editions. The book possesses the exceptional merit of not being a mere compilation but a most painstaking presentation of all the methods employed in urinalysis as well as the most recent facts and theories concerning this important branch of physical

diagnosis. The author is fortunate in the possession of such an amount of knowledge and skill in laboratory technic as to have been enabled to test thoroughly the best of the current methods and to devise important modifications of many of them.

As a valuable contribution to urinalysis we may point out the author's method of centrifugal determination of chlorides, phosphates and sulphates by means of the percentage tube, thus simplifying the difficult and complicated chemical quantitative tests. This, however, can best be carried out with an electric centrifuge which is accessible to a few only. That a fourth edition has been found necessary shows how highly this book is appreciated by the profession, at the same time indicating how the importance of the laboratory as an aid in diagnosis is gaining general recognition. The reader will also find this edition not a mere reprint but a careful revision which keeps it abreast of the advancements recently made in urinalysis. In conclusion, we may mention that the "insurance examiner" also has not been forgotten. A chapter on "examination of urine for life insurance," is of special interest to the great number of physicians who are engaged in this work. The publishers have done all in their power to make the book as attractive as it is instructive.

A. R.

OBITUARY.

Dr. John B. Hamilton, former Surgeon-general of the United States Marine Hospital Service, and editor of the *Journal of the American Medical Association*, died at Elgin, Ill., December 24, 1898, from the effects of a severe cold complicated by an attack of peritonitis. An operation performed by Dr. Senn proved in vain. Dr. Hamilton was born in 1847, in Jersey county, Ill., and was graduated from Rush Medical College in 1869. The profession loses in him an excellent surgeon and an able editor. Our Marine Service will long reap the benefits of the reforms instituted during his service.

MEDICAL NEWS AND MISCELLANY.

Double Personality. Dr. Howard reports the following interesting case: Mr. B., a respected business man, married and father of 3 children. His position caused him to travel extensively in America. About 10 years ago he commenced to go away from home without giving any definite statement of where he was going or when he would return. Upon his return he would not give any direct answers as to where he had been on these occasions; he appeared slightly dazed in memory and intellect. Two years ago, in the month of October, he disappeared and no trace of him could be found until he returned home on January 14th. A man who knew him in his own city found him a month prior to this date conducting a country cross-roads store on the upper Potomac. He carried on business under the name of Simpson. He did not know his former acquaintance, and the repeated mentioning of his true name, "Mr. B.," he at first took as a joke, then became indignant, and was so positive in stating that he was Simpson, giving his past history, stating he was from Oregon, and going into full and complete details of his life and business in that state, that the former friend went away fully convinced of his mistaken identity. One peculiarity Simpson had, was his passion for fishing, and he gave as one excuse for having chosen the little village, that there was good bass fishing in the river. On the morning of January 14th he appeared at his own house, to the surprise and joy of the family. He was Mr. B. again, but no questions as to his past whereabouts could he answer. Only when he became convinced of the lapse of time did he realize that something strange and abnormal had happened to him. His memory of the last three months was a blank. When hypnotized, however, he said in answer to the suggestion that his name is unknown, "D—n it, you know my name is Simpson; what do you want to bother me about it for? You remember that, or else I don't take you fishing." "Well, Mr. Simpson, let's go fishing." "All right; wait till the boy comes back and I will close up the store." "By the way, Mr. Simpson, how far is it to the city?" "Oh, about 40 miles." By this manner of questioning Mr. Simpson I found where the body of Mr. B. had been. The next day I hunted up Mr. Simpson's store, and found, indeed, that such an individual existed in the life of the village.

Maryland Medical Journal.

English as She is Wrote in Japan. The following postal card received some weeks ago at the office of the INTERNATIONAL MEDICAL MAGAZINE is a unique specimen of oriental English:

TOKYO, August 5th, '98.

Gentlemen:

As for the sending of your *Magazine*, I hope you will stop to send it, till the time if I would order again or renewedly, for it goes for nothing to me; while I am very busy and absentee at present for always.

Yours truly,

ATLANTIC CITY IN WINTER.

SOME OF THE REASONS WHY PATIENTS ARE SENT THERE.

Special Correspondence of the International Medical Magazine.

ATLANTIC CITY, N. J., January 12, 1899.

To the Editor:

Americans have reason to be proud of Atlantic City as a great health resort. The number and variety of its attractions and conveniences for invalid visitors are well known to the majority of physicians in the eastern cities through the practical results observed in patients sent here. Moreover, great numbers of physicians have experienced in their own persons the beneficial influence of a sojourn here by the sea when out of health. And it is hardly possible to find a locality now, even in the most remote regions west or south, which the fame of Atlantic City has not reached. People come here during the summer season from everywhere not only for their health, but to escape the heat, to bathe in the salt water and to have a good time generally.

But why should people go to Atlantic City in winter? I imagine some of our uninitiated medical friends to be asking. Nobody claims that the climate is remarkably warm here from January to June, which constitutes the fashionable winter and spring season. It is considerably warmer of course than in New England, New York, the middle northern and the western states, since the ocean exerts a decidedly mollifying and equalizing influence upon the temperature. Still the thermometer often falls below the freezing point, especially at night; the wind sometimes blows, and exceptionally there may even be snow on the ground.

What then is the attraction? Why do patients who have spent a winter here come back often year after year? Why do physicians send their patients even in mid-winter when all other therapeutic measures have failed, and why do such patients return home after a sojourn of one or two months here with improved appetites, restored sleep and the rosy bloom of health?

I will explain the mystery. It is all due to a fortunate combination of health-giving influences which includes, first of all, unusual facilities for keeping out of doors almost constantly in the open air. This alone would work magical results anywhere, even in a less invigorating climate, to pallid air-starved invalids accustomed to confinement in close, superheated rooms. The broad level "Board Walk" which skirts the beach in front of the town for some three miles is connected by convenient foot ways with the piazzas and enclosed sun parlors of over thirty hotels all provided with every possible equipment for the care and comfort of ailing people. Hundreds of luxurious wheeled chairs manned by stout attendants in uniforms are waiting at convenient points along the Walk and about the hotels, and above all, it is the fashion to ride in them. Most patients when well wrapped and carefully tucked in, can ride in one of these chairs up and down the Walk all day even in a cold spell without risk and with the greatest advantage. The Walk is so wide that a dozen or more of the

wheeled chairs can move abreast without crowding and during the height of the winter season it is often filled from side to side with the moving throng of such vehicles together with large numbers of pedestrians. There is plenty to interest and amuse those thus engaged in wooing back health by means of this unique kind of open-air cure. On the land side there is an almost continuous row of attractive shops and places of amusement opposite the center of the town, while on the other side, Old Ocean with ships frequently to be seen in the offing, proves a never-failing attraction. Besides, the reflecting surface of the great expanse of water doubles the power of the light, and so it is that every sunshiny day on the Board Walk with the pure, ozone-laden, invigorating sea-air works wonders in the up-building of the shattered nerves and exhausted constitutions of the many thousands of these perambulating health-seekers.

Time and space fail to give a detailed description in this letter of the many incidental attractions of Atlantic City, such as its Casino, and other fashionable places of recreation, its excellent sewerage system and fine water supply, its walks and drives, the choice society to be met at its leading hotels, its first-class physicians and drug-stores, and the splendid transportation facilities offered especially by the Pennsylvania Railroad with its ramifications north, west and south. It may interest your readers to hear more of these in subsequent letters.

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ORIGINAL PAPERS.

A CASE OF PAGET'S DISEASE OF THE BREAST OF THIRTEEN YEARS' DURATION, NOT SHOWING CARCINOMATOUS INVOLVEMENT OF THE MAMMARY GLAND.¹

BY H. C. MASLAND, A.M., M.D.,

Philadelphia.

With a Pathologic Report

BY W. WAYNE BABCOCK, JR., M.D.,

Demonstrator of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia, and Pathologist to the Kensington Hospital for Women.

TRUE Paget's Disease of the Breast, or, more properly, Dermatitis Papilloma Malignans, is not of common occurrence. A typical case offering some interesting points for consideration is, therefore, worthy of record.

There is much diversity of opinion as regards the exact nature of this condition. Some believe it a chronic eczema or psoriasis of the breast; others, a true carcinoma of the skin; while practically all acknowledge a strong liability to secondary malignant involvement of the mammary gland.

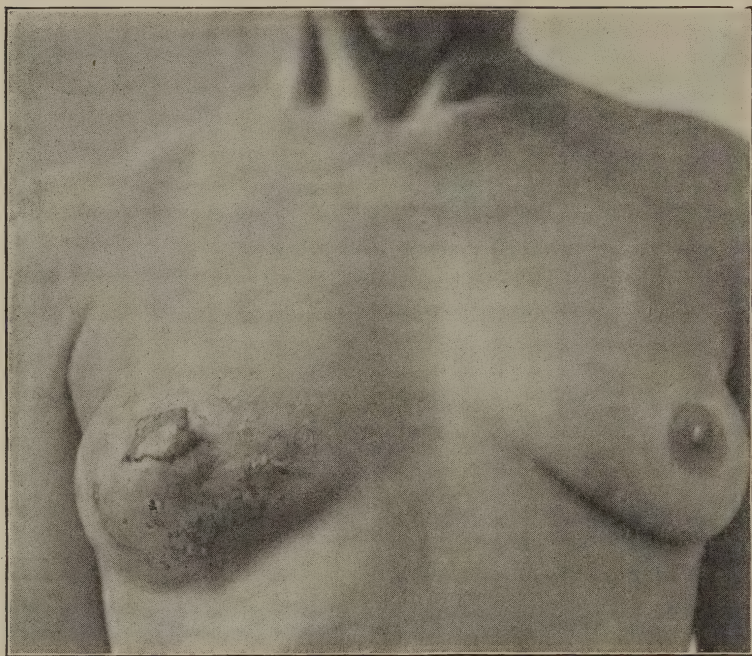
The following is a report of the clinical history of the case:

Mrs. X., white, native of Pennsylvania, fifty-five years of age. As regards her family history, her only sister is living and well; her three brothers died of tuberculosis. In these three cases there is a history of much exposure. Both her parents died in middle life of acute diseases, lasting, in each case, less than forty-eight hours. She had two maternal aunts who died of tuberculosis. Three maternal uncles died at about ninety years of age. Her mother's twin sister died in her eightieth year. Her maternal grandfather died quietly in bed after retiring in his usual health, aged 93. His wife,

¹ Read before the Philadelphia Pathological Society, Feb. 9, 1899.

who survived him several years, was probably a little older than he at her death. Her paternal grandfather died in his sixtieth year from an unknown cause, while his wife lived to be seventy-nine. There is knowledge of but one case of cancer among her numerous relatives, a maternal cousin who died of uterine carcinoma. The numerous cases of longevity in the first and second generations, coupled with the presence of tuberculosis in the second and third generations, are worthy of notice.

Menstruation appeared in her fourteenth year and ceased in her forty-eighth year. She was never pregnant, and states that she never suffered



from gynecologic troubles. Other than from the present trouble, the patient has enjoyed good health.

About thirteen years prior to her coming under my care, she first noticed a small scab on the apex of the right nipple. Picking this off, there was a small, raw surface, from which there was a slight serous discharge. There was always a slight degree of itching, though early in its history not sufficient to give much annoyance. For about three years she treated the breast with cold cream and other mild home-remedies. The progress was slow during this time. For the next seven years she was under the care of a physician who prescribed the one ointment in all that time. This was, in all probability, a quite bland preparation. Toward the close of this time, the

disease started to spread more rapidly. She was then under the charge of a second physician for nearly one year. During this time the disease was becoming more extensive. She suffered greatly from burning, shooting pains over the surface of the involved area. Again there were periods of freedom from pain. These periods coincided with the times when the surface was most protected by the recuperative skin formation, to be referred to later. None but the blandest ointments could be endured.

In August, 1897, at my first examination, it was noted that the breasts were well developed. The right breast stood out the more prominently from the chest and was increased in size. The accompanying illustration, taken a short time before the operation in November, shows very well the general contour of the parts at the time of my first observation. On the right breast, extending beyond the region of the areola in all directions, was a moderately indurated area which bore a marked resemblance to chronic eczema. The outer zone showed a recuperative effort at skin formation. The new skin was pale and dry, exfoliating, and of little vitality. The central area exhibited an open, bright-red, ulcerative process. The whole breast gave an increased degree of tension, with a feeling of slight superficial induration over the implicated surface, but the most careful palpation failed to show any evidence of involvement of the deeper structures of the mammary gland.

Examining the illustration, you will notice that the nipple has disappeared. Its site is occupied by a slightly prominent, rounded, granular, ulcerated surface. When a girl, she suffered from a boil of the right nipple, and, subsequently, it was never as prominent as its mate. The obliteration of any distinctive nipple is, however, clearly attributable to the present process.

Just at the outer circumference of the breast, and toward the axilla, there were detected two small nodules, the largest about the size of a bean. These never gave discomfort; the larger one only was discovered by the patient about two years before, and had not increased in size since then. Repeated examinations before and at the time of operation disclosed no involvement of the axillary gland. A point of great interest in this case is the series of rapid evolutions which occurred from time to time in the appearance of the involved area. Three weeks prior to the taking of the appended photograph, the whole surface was an open, bright-red, granular ulcer, exuding a great quantity of a grayish-white sero-purulent discharge. Dr. L. A. Duhring saw the case in consultation at this time and considered it a typical case of Paget's Disease.

The illustration shows the degree of skin formation in these intervening three weeks. The new skin was moist and pale, presenting a macerated appearance. This condition of the skin was due to the fact that at this time I was applying olive oil and other ointments of a more liquid consistency than in the beginning of the treatment. The previous history of the case was of an improvement of this order of a greater or less degree, then a

quiescent stage of a variable length of time, and then a more or less rapid recession. The central area, in about the position of the normal areola, had, however, never healed over, as is shown by the dark central area of the illustration. Naturally, the pain was much greater with the surface exposed, and always of a burning, shooting, superficial nature.

The operation for excision of the breast was performed November 21, 1897, and was uneventful. The wound, save for a small space that could not be brought together, healed by primary adhesion. The ununited surface healed by granulation.

Fourteen months have now elapsed since the operation was performed. Mrs. X., who is of an energetic temperament, has done all of her own housework. She feels better, mentally and physically, than for many years. There are absolutely no signs of any return of the disease.

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PATHOLOGIC REPORT BY DR. BABCOCK.

Amputated Right Breast, including a small portion of the subjacent muscle.—The specimen has been fixed, hardened and preserved in formaldehyd solution, which has impaired the color effects. A superficial portion of the specimen has been removed for microscopic study.

The epithelial surface of the specimen is convex and slightly uneven. Just above and external to the center of this surface is an area of a darker color 2.5 cm. in diameter. Its edges are slightly raised and thickened, and its surface faintly granular. It is irregular in shape, with rounded, convex borders. Scattered over the surface of the breast are other areas, measuring from 4 to 10 mm. in diameter, which conform, in the darker color, the irregular curved outline and the raised and thickened borders, with the larger area. These evidently represent seats of superficial ulceration. They seem to be separated by lighter, uneven areas of thickened and desquamating epidermis. The entire involved surface is irregularly rounded and measures 7.5 by 8 cm. It is surrounded by a narrow border of apparently healthy skin, the border being distinctly outlined and slightly elevated.

The nipple is absent, and it is difficult to determine its location from the surface appearance. On section, the skin is found to vary from 2 mm. in thickness at the periphery to 4 mm. in the region of the nipple. Subjacent to the integument is a large mass of adipose tissue, except near the center, where a fibrous cord, 13 mm. by 16 mm. in thickness, passes from the skin into the deeper structures. Below, this fibrous cord becomes irregularly expanded, until it measures 4 cm. in diameter 2 cm. below the surface. It gives off narrow prolongations of fibrous tissue into the surrounding fat. The tissue is firm and fibrous throughout, and to the naked eye gives no suggestion of glandular structure or degenerative change. There is little to indicate the usual lobulation of the mammary gland. The bulk of the speci-

men consists of adipose tissue, a fragment of muscle being attached to its under surface.

For microscopic study, vertical sections were taken from characteristic portions of the integument, including the deeper fatty and fibrous tissues. Transverse sections of the fibrous cord below the nipple area, and sections from outlying portions of fibrous tissue imbedded in the upper and outer quadrant of the breast, were also studied. The portions of tissue were dehydrated in alcohol, embedded in celloidin, sectioned, and stained with hematoxylin-eosin, thionin and Bismarck brown with Weigert's fibrin stain.

In describing the histology of the affected skin, it is convenient to first consider that of the outlying, apparently uninvolved surface; second, the structure of the areas between the points of ulceration; and, finally, that at the seats of ulceration.

The outlying integument conforms to the normal structure, the only alteration noticed being a tendency to a round-celled infiltration around some of the vessels of the corium. The involved integument between the areas of ulceration shows decided alterations. This is most marked in the corium, which is the seat of a marked cellular infiltration. This is noticeable in the perivascular spaces in all portions of the corium, but is more intense and diffuse in its outer layers. In places the infiltration is massed in rounded areas, so as to suggest the early stage of tubercle. There is a tendency for this infiltration to destroy the papillary character of the corium, and where the process is most intense the papillae are absent, the border of the corium being indicated by a slightly wavy line. The new cells include leucocytes and cells of the lymphoid and epithelioid type. The latter are oval or fusiform, have nuclei that are smaller and paler than epithelial cells, and tend to be arranged about the numerous papillary loops which ramify in upper layers of the corium. The cells in the papillary layer are separated and show swollen and poorly-staining nuclei. The cells adjacent to the capillary loops in the deeper portions of the cellular infiltrated corium also show evidence of edema, although the majority of cells in the papillary body and the deeper layers of the corium are well stained. The capillary loops are increased in number. Erythrocytes are present in the larger capillaries, but there is no evidence of hemorrhagic infiltration.

The rete mucosum is irregularly increased in thickness. It is at the places of thickening that the greatest alterations are noticed in the cells. The deeper-lying cells have swollen nuclei, and show large vacuoles, which appear in places to contain dark granules of nuclear detritus. Mitotic figures are also present. The inter-epithelial spaces contain a few leucocytes and mast-cells. In places the cells have been separated by fluid; vesicle formation is absent, however. In the thinner portions of the rete, the vacuolation of the cells does not exceed that found in normal skin. The stratum granulosum is well marked, being broadened by swelling of the cells. The stratum lucidum is visible only in parts of the section. The

stratum corneum is thickened and shows separation of its layers. It contained a few vacuoles enclosing a dark granular detritus.

In those portions of skin supposed to be the seat of ulceration, the upper layers of the corium presented the appearance of granulation tissue. There is no evidence of papillae. The new tissue is ramified by branching capillary loops distended with corpuscles. The superficial cells are edematous and degenerated, many failing to stain. The rete and stratum corneum are absent. In other places small areas resembling granulation tissue are found, covered with an attenuated rete, two or three cells in thickness, which has its epithelial elements obscured by inwandering cells. Superficial to this a stratum lucidum and stratum corneum are seen. These are evidently recently-healed ulcers.

Mast-cells are observed throughout the section. A few sweat glands and an occasional sebaceous gland are present, but do not appear to be involved in the inflammatory reaction.

Sections of the deeper structures present adipose and dense fibro-connective tissue. The fibro-connective tissue has a moderate number of blood vessels. In the more superficial portions, a moderate perivascular infiltration is present. A striking feature is the absence of glandular ducts or acini. This is noticed in all of the sections, both vertical and longitudinal. No other unusual features were found in either the fibrous or fatty tissues.

The pathologic diagnosis is a papillary dermatitis of the breast, with obliteration of the mammary ducts and acini.

Paget's disease of the nipple is of chief interest from its intimate relation to carcinomatous change in the mammary gland. In his original paper,¹ Paget refers to about 15 cases in all in which carcinoma appeared in the mammary gland within 2 years after the onset of the dermatitis. It was not found that the malignant disease of the gland followed skin inflammations of an eczematous or psoriatic character. This feature of malignant papillary dermatitis, as it has been termed by Thin,² has been confirmed by many observers, although cases are on record in which the disease has progressed much longer than 2 years without evidence of malignant change in the gland. Although Paget's disease is so frequently followed by carcinoma, its rarity is shown by its infrequency in association with carcinoma of the breast.

Of 400 cases of carcinoma found in the St. George's Hospital Reports,³ only 5 (1.2%) were found to have this association. There are few established facts that have been added to our knowledge of this condition since Paget published his article. Thin⁴ believed that the affection was

¹ St. Bartholomew's Hosp. Reports, 1874, p. 125.

² British Med. Jour., May 14-21, 1881, pp. 760-799. Trans. Path. Soc., London, 1881, p. 218.

³ Shield quoted by Coley, 20th Cent. Pract., XVII, p. 426.

⁴ Brit. Med. Jour., May 21, 1881.

primarily cancerous in the mammary ducts, and that the malignant process going on in the smaller glandular ducts produced poisonous substances, leading to the inflammation of the skin. The frequency of mammary carcinoma without dermatitis, and the occurrence of cases of typical malignant papillary dermatitis with no malignant change in the glands, would seem to negative this theory. Darier, J. Hutchinson, Jr., Wickham⁵ and others have propagated the theory that minute unicellular animal parasites produce the affection. Proof is yet wanting that psorosperms are the active cause, while the bodies described as parasites seem to be produced by vacuolation or other cellular degeneration, by presence of inwandering cells, or by the processes of cellular division. A more recent theory, suggested by Shield, describes the disease as a superficial carcinoma of the skin. It is, however, rather unusual for epithelioma to follow this affection, and our present conceptions of malignant tumors would render a carcinoma which did not tend to infiltrate adjacent tissue a marked anomaly. It would seem best for the present to simply consider the affection as a peculiar chronic inflammation of the skin of unknown origin which, by its peculiar persistent irritation, favors the development of carcinoma. The malignant change is first noticed as a distension of the mammary ducts resulting from a hyperplasia of the lining epithelium. The thinner wall of one of the finer ducts, some distance below the surface, finally gives way, and an epithelial invasion of the surrounding tissues occurs.

In cases like the one here reported, the obliteration of the mammary ducts may explain the long immunity from carcinoma. The disease usually affects the right breast in persons between 35 and 60 years of age. While usually affecting women, the male breast is not exempt, and a similar affection has been noticed upon the scrotum, face, and other parts. The symptoms are well illustrated in the clinical history of the present case. The diagnosis from eczema is often difficult. The sharply-outlined areas of superficial ulceration, showing a vivid red surface, exuding a viscid, yellowish discharge; the elevated circinate borders; the superficial parchment induration, and the resistance to anti-eczematous remedies, are characteristic of the disease. The absence of pustules and vesicles in any stage of the process is also significant.

The tendency for carcinoma to speedily supervene renders a prompt consideration of the operation for excision of the breast desirable. Superficial measures and operations seem to be almost invariably futile and may permit a fatal issue.

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⁵ *Maladie de la Peau. Dite Maladie de Paget*, by Dr. Louis Wickham, Paris, 1890.

MODERN VIEWS ON ECZEMA AND THEIR INFLUENCE UPON ITS TREATMENT.

BY ARTHUR VAN HARLINGEN, M.D.

Emeritus Professor, Diseases of the Skin, Philadelphia Polyclinic, etc.

A GOOD many years ago, only one form of eczema went by that name, the vesicular. Papular eczema was called "lichen," infantile eczema "porrigo," "red gum," etc. Under the influence of Hebra, a new definition was given to eczema, which was made to include a great many simple inflammatory affections of the skin, even those caused by external irritants which we, in this country, commonly class as dermatitis. Later, Unna introduced the class of seborrhœic eczema.

Dermatologists have of late taken a good deal of interest in the question of the possible bacteriologic origin of eczema. I have recently seen a monograph on the subject. (*L'Eczéma, Maladie parasitaire. Par le Dr. Leredde*, Paris, 1898) in which the author seems to take it for granted that eczema is an infectious disease. He seems to think that the different varieties of eczema met with are due to variations in the soil, with perhaps symbiosis or the simultaneous occurrence of two or more varieties of bacterial organism. There is no doubt that some affections we have been accustomed to call eczema are really forms of ring-worm; and as our knowledge of the bacteria of skin disease enlarges, we shall doubtless find other varieties of parasite causing various other forms of the disease until our ideas on the subject shall undergo a complete change, and the nomenclature of a few years ago shall become quite obsolete. Acute vesicular eczema is believed to be due to the toxins of a certain *morococcus*. Chronic or papular eczema is probably due to the same cause, and eczema seborrhœicum shows in its scales and crusts morococci, flask bacilli and minute bacilli of undetermined character.

I must say that in this view of the origin of eczema, its bacteriology, if we may call the imperfect knowledge we possess by such a name, is to me a very interesting one. Accustomed to look upon the disease from the practical and eclectic standpoint of a practitioner, I have never entirely taken the old diathetic view of the French school of thirty years ago, nor the purely local view of the Vienna school. The parasitic theory, therefore, commends itself to me as explanatory of many forms of the disease and as well worthy of the further study it is sure to attract in the immediate future.

Any one who has observed seborrhœic eczema must have been struck by its clinical resemblance to well-known parasitic diseases of the skin. The fact that it so often begins in the scalp, then manifests itself on the face, and, finally, appears on the sternum in the form of rings, is calculated to

attract the attention of the observer and to suggest the analogy just mentioned.

Again, the orbicular form of eczema, large, round, well-defined patches of disease scattered over the body and limbs and resembling ring-worm so closely as often to be mistaken for that disease, offers an excellent illustration, from the clinical point of view, of a parasitic disease. Other forms of eczema, as that occurring on two opposing surfaces, the eczema intertrigo of writers, offer the appearance of a disease of parasitic origin whose growth and extension are due to contiguity and favoring circumstances of heat and moisture.

The treatment of eczema, as followed by those who are most conversant with the management of diseases of the skin, offers considerable support to the parasitic theory of the disease.

The remedies used, aside from those employed simply for the purpose of allaying inflammation, are, largely, parasiticial in character. Sulphur, tar, carbolic acid and creosote, mercurial preparations, potassa caustica, salicylic acid, the various preparations and compounds of iodine, ichthyol, resorcin, etc., occur to me as commonly reputed parasiticides, and also as valued remedies in the treatment of eczema. Not all of these act directly upon the parasites. In fact, it is questionable whether any, excepting the very strongest, have the power to destroy outright any parasite of the skin excepting, perhaps, the staphylococcus pyogenes. Some act as keratolytics, softening and disintegrating the horny layer of the epidermis; others as keratoplastics, building up again the external layers of the skin and finishing the work begun by these destructive agents, which break down and open the deeper tissues and either kill the parasite by the inflammatory reaction produced, or, perhaps, sweep it mechanically away.

Take, for example, the treatment of chronic eczema by potash soap, followed by some mild ointment. A vigorous rubbing with the *sapo viridis* in the case of a patch of chronic eczema, softens and breaks down the epidermis, throws open the vesicles to the air, and removes a considerable portion of their contents, besides causing a profuse exudation of lymph upon the surface. The parasite may be supposed to be removed by this, and now a simple ointment, applied to neutralize the excess of potassa and to give protection to the part, will hasten the cure.

I might give other instances, but the above will serve as an example. If we approach the treatment of eczema from this point of view, many things will appear clear to us which have been obscure, and I think, too, that our treatment will be more satisfactory. Certain it is that to the intelligent physician the empirical use of drugs must always be objectionable and to be abandoned whenever some rational plan can be followed. These newer views of the nature of eczema seem to me to promise much for the practitioner, and, perhaps, in the future will lead to less empiricism and fewer blind experiments with new drugs.

*CHRONIC PLUMBISM FROM DRINKING-WATER.*¹

BY L. SMIRNOW, M.D.

New Britain, Conn.

(Continued.)

THE QUANTITY OF LEAD THAT MAY PROVE INJURIOUS.

IT is universally known and conceded that large amounts of lead in drinking-water will produce lead poisoning in the persons who happen to use it, and for this reason the instances of lead poisoning by large quantities of lead need but a transitory notice. Thus no one would doubt the truth of the statement that in 1857 numerous cases were discovered in Norwich, Conn., poisoned by lead contained in the drinking-water, which was found to be as much as four grains to the gallon. It remains for us, therefore, to consider the minimum amount of lead in drinking-water that undermines health, and whether a minimum can exist at all; to this part of the subject our attention is now confined. About thirty cases are here reported in which the quantity of lead in the drinking-water is given, and these quantities are quite at variance. Thus one case was poisoned by .6 gr., three cases by .3 gr., one by .42 gr., one by .25 gr. and another by .21 gr., thirteen persons by .7 gr., one by .125 gr. and another by .07 gr. of lead per gallon of water. The most interesting are the last two or three cases and the following four: one occurred as a consequence of using water containing one-fifty-seventh of a grain of lead per gallon, two from the use of water containing not more than one one-hundredth of a grain, and several cases at Tunbridge, Eng., as a consequence of drinking water containing even less than one one-hundredth of a grain per imperial gallon.

The literature is not wanting in some interesting speculations in relation to this subject, and they all lead, more or less, to one definite conclusion.

Thus Dr. Parks, a high English authority, thinks that any quantity of lead exceeding one-twentieth of a grain per gallon must be considered as unsafe. Professor Graham, Mr. Taylor and others are of the same opinion.² Dr. Smith, of Sydney, in his papers before the British Association, has given his opinion, based upon observations in Manchester, that one-fortieth of a grain of lead per gallon is sufficient to cause lead poisoning in some people, while one-tenth of a grain may be required for others.³ Dr. Sydney Ringer thinks that one-fortieth or one-fiftieth of a grain per gallon

¹ A portion of a thesis entitled: "The Quantity of Lead in Drinking Water that May Prove Injurious to Man, and Improvements on the Separation of Lead from Urine by Electrolysis."

² Report of State Board of Health of Massachusetts, 1871.

³ *Dingler's Polytechnisches Journal*, 1861, p. 220.

is sufficient to produce some or all the symptoms of lead poisoning.⁴ Professors Hoffman, Graham and Miller⁵ adopt the opinion of Dr. Smith, of Aberdeen, that less than one-twentieth of a grain per gallon produces no deleterious effects, and so minute a quantity as one fifty-seventh of a grain per imperial gallon can have no possible influence on the health. Dr. Horatio Adams, of Waltham, Mass., however, contested these opinions in his report to the American Medical Association,⁶ and has produced abundant material to prove the contrary. In many cases of unmistakable lead diseases, he, and other members of the same committee, have examined the drinking-water used, and, although, as a rule, the amount of lead would not fall below one-twentieth grain to the gallon, yet the cases have not been rare, he says, where disease has been produced by water containing one one-hundredth of a grain of lead per gallon. One-hundredth of a grain of lead is easily detected by a simple stream of sulphuretted hydrogen. Yet water has sometimes caused disease, under the eye of a part of the above-named committees, where this test showed no trace of lead; but lead was abundantly evident after concentration of the water, and the sulphuret thus obtained converted into salts of lead and again examined, to confirm the hydrosulphurous test. In view of this, therefore, and instancing the Tunbridge⁷ well, the water of which contained so small a quantity of lead as to escape detection at the hands of the best chemists of that day, Dr. Adams concludes that the amount of lead capable of causing disease is even less than one one-hundredth of a grain per gallon of water, or less than one to seven million.

Dr. Horsford, who held rather opposite views, had manifested no little interest in the matter. He examined⁸ the spring water of Dedham, Mass., and found that 100 cc., at rest twelve hours in a leaden pipe several years in use, gave 0.00003 gr. = 0.0013 gr. in a gallon.⁹ "Several years since," he says, "Dr. Webster examined some of this water from the pipes of a gentleman who was made ill, and detected lead by treatment with sulphide of ammonia. * * * But, so far as I have been informed, only one well-established case of lead disease is known to have occurred from the use of this water." The case to which Dr. Horsford refers is No. 76 of this collection. That he was misinformed in regard to the occurrence of more cases of lead poisoning from this spring water, is shown by the fact that another one occurred in the same house (*vide* Case 77), also as the result of using the same water. But Dr. Horsford looks for "well established" cases of

⁴ *Materia Medica and Therapeutics*, 7th edition, p. 225.

⁵ *Vide* Report on the supply of water to London, in the *Quarterly Journal of Chemistry*, No. 16.

⁶ *Trans. of the Amer. Med. Assoc.*, 1852, 167.

⁷ *Vide* Case 31.

⁸ *Proceedings of the Amer. Acad. of the Arts and Sciences*, 1848, p. 76.

⁹ More correctly 0.0011355 grs. to the gallon.

lead poisoning, and, apparently, leaves those of minor nervous and digestive disturbances wholly unnoticed. As a matter of fact, numerous other cases of lead poisoning from the use of the spring water of Dedham have occurred, as is evidenced by the reports of Dr. Stimson, the resident physician, and Dr. Adams. In connection with the one above quoted (Case 76), and in reference to the same spring water which Dr. Horsford tested for the lead and found 0.0013 gr. per gallon, Dr. Stimson says:¹⁰ "Many of the inhabitants continued to drink the water, although warned that it contained a deadly poison, until they began to feel the evil effects of it, when it was abandoned. Most of the cases recovered after the use of the water was discontinued." In regard to the same spring water, again, Dr. Adams says:¹¹ "So numerous were these cases of lead poisoning from the drinking-water contaminated with lead, as to be almost considered in the light of an epidemic. Most of the inhabitants abandoned the use of the water, and the great frequency of the disease disappeared. But some of them were sceptical and continued to use the aqueduct water, and were unwilling to believe the poisonous effects of it, until forced to do so by their personal experience in the disease caused by it."

In view of the fact that cases of lead poisoning have occurred from drinking-water containing one one-hundredth of a grain of lead per gallon, and others from less than that quantity, it may be inferred that very minute quantities of lead, if taken for some time into the system, will produce disease. A question now arises: Can there be a limit to the amount of lead which, habitually taken with the food or drink for any length of time, will produce disease? With evidence so impressive, of such minute quantities of lead in the drinking-water which proved deleterious, and that, too, in many persons, it would be a mere prejudice to lay it to personal susceptibility. To be sure, more lead may be required to poison one person than another, but that these minute quantities, which caused disease in some would not produce it in others less susceptible to it, even if its ingestion be continued for an indefinite length of time, cannot be proven. That lead, once gotten into the system, is very slowly eliminated, is a fact universally recognized. It may linger in the body for weeks, or even months, before its elimination is complete, provided there is no further introduction of it into the system. If, however, its introduction in whatever manner, and in ever so small a quantity, still continues, that introduced daily exceeding the diurnal elimination, the surplus will accumulate in the body, and may be inappreciable, as far as its action on the organism is concerned, so long as the quantity remains small. But slowly and surely it continues to collect in the system, and to lodge in its tissues, until it reaches the amount sufficient to produce disorder, and then manifests itself in the usual way.

This quantity so accumulated need not be very large, for in some cases

¹⁰ *Trans. of the Amer. Med. Assoc.*, 1852, p. 193.

¹¹ *Ibid.*, 196.

of lead poisoning, on analyzing the tissues of the body, only a very small amount may be found to be the cause. No reliable data are to be had on this subject, however, so that all reasoning thereon must be rather of a speculative character. Hence, given an individual who drinks water containing one-fiftieth of a grain of lead per gallon, and assuming that he uses four gallons of water per week, in one year (52 weeks) he will have consumed 4.16 grs. of lead. It is probable that most of it would be absorbed, it being so dilute that the H_2S in the bowels would not precipitate it. One-fourth of its amount, however, would be eliminated through the kidneys. So, for five years, after deducting the amount eliminated, about 15.6 grs. of lead would remain lodged in the tissues, a quantity which is borne out by all available facts to be sufficient to produce disease.

It would appear, therefore, that a person would be poisoned by water containing one-fiftieth of a grain of lead to a gallon, all conditions being the same, at about the end of the fifth year. The less susceptible the individual, the more has to accumulate in his system in order to affect him, and, therefore, a longer time elapses. Extending these calculations further: with one one-hundredth of a grain of lead per gallon, it would take about ten years before enough will accumulate to prove poisonous; and with one two-hundredth it would take about twenty years. It will be urged that these quantities are too small to produce any effects. But how much lead can be expected to enter the organism of an individual who has slept once or twice in a newly-painted room? Yet a case is on record that has presented pronounced symptoms of lead poisoning, the cause not being traceable to anything else than to sleeping in said room. How much lead can be expected to enter the system of individuals who have worked for eight, twelve, fifteen, sixteen, eighteen, nineteen, twenty, etc., days in preparations of lead? Numerous such cases are reported by the highest authority on the subject, Tanquerel des Planches, to have occurred.¹² How much lead can be expected to enter the system of individuals from the use of cosmetics and hair dyes? from baking bread with painted wood?¹³ from the use of imperfectly burnt pottery?¹⁴ from habitually biting silk thread which manufacturers often load with lead to give weight to it?¹⁵ Cases with positive symptoms of lead poisoning have come for treatment to the New Haven Dispensary, having been employed by the Candee rubber manufactory but a week or two, the cause being traceable only to the metal with which they were in contact during the short period of their work. Many other such instances could be adduced, but I think it quite superfluous.

From what has been said, it may be made conclusive, that lead in ever so

¹² Lead Diseases, Trans. by S. L. Dana.

¹³ Le Progres Med., 1877, p. 49.

¹⁴ Schmidt's Jahrbücher, Bd. CXLIV., p. 279. *Phila. Med. Times*, Vol. IV., pp. 241, 483.

¹⁵ Wood's Therapeutics, 1894, p. 487.

small a quantity, if continually introduced into the system, the daily income exceeding the daily elimination, and the excess accumulating in the system (the latter two conditions being indispensable), will sooner or later cause plumbism in the individual thus involved. Not speaking more at length of the very minute quantities, which may prove tolerable for some persons, or may take a very long time before it can produce any effects, I wish to emphasize more particularly upon one-fiftieth of a grain per gallon as a quantity possible to produce disease. It will accumulate, as above calculated, in about five years in sufficient strength to prove deleterious to a person of ordinary susceptibility. For others it may take a few months or a year or so longer to produce the same effects, but it will, sooner or later, affect any person using such water.

CASES OF LEAD POISONING FROM DRINKING-WATER.

The following are well-authenticated cases of chronic lead poisoning, the cause being in some directly traced to drinking-water by chemical analysis, some of which give the quantity of lead so found, others also the quantity of lead eliminated through the urine. All doubtful cases, which are quite numerous, I have rejected, as also many cases in which no analysis of the water or urine was made.

Cases in which the quantity of lead is given:

CASE 1.—This case is reported by Dr. Angus Smith, and quoted by Dr. W. S. Porter.¹⁶ It is a case of lead palsy; the quantity of lead was found to be only one-hundredth of a grain per gallon.

CASE 2.—Dr. Adams, of Waltham, Mass., reports a case of poisoning, from drinking-water, in which less than one-hundredth of a grain of lead was found per gallon of the water. This was a case of paralysis of the muscles of the forearm, hand and fingers of one limb.¹⁷

CASE 3.—Dr. Graham reports a case of lead poisoning from one fifty-seventh of a grain of lead per gallon.¹⁸

Of the many cases, Dr. W. R. Thomas¹⁹ reports the following four:

CASE 4.—Patient A., aged 30, a traveller in Sheffield, a sober and steady man, complained of colicky pains and griping, principally about the umbilicus and in the right iliac region; of always feeling tired; of aches in the back and limbs. The bowels were costive, the tongue foul, the gums were red, but there was no blue line, except near the second molar tooth. The water he used was found to contain 0.25 grain and the urine 0.19 grain of lead per imperial gallon.

CASE 5.—B. The indications of the action of lead in this case were: Blue line on gums, furred tongue, dyspeptic symptoms, pain in abdomen and back, frequent micturition at night, albumen in the urine, general debility, slight confusion of intellect, paralysis of extensors of both hands. The drinking-

¹⁶ *Med. Press and Circular*, 1886, p. 142.

¹⁷ *Trans. of the Amer. Med. Assoc.*, Vol. V., p. 222; Report of State Board of Health of Massachusetts, 1871.

¹⁸ *Med. Press and Circular*, 1886, p. 142.

¹⁹ *Ibid.*, p. 72

water was found to contain .25 grain of lead and the urine contained 0.07 grain of lead per imperial gallon before taking any remedy; after taking gr. vi of potassium iodide, three times a day for two weeks, he passed .10 grain of lead per imperial gallon.

CASE 6.—C., aged 26. The symptoms were: Pale lips, red line on gums, furred tongue, dyspepsia, constipation, colicky pains in bowels, which often came on in paroxysms, pain in back and limbs, general debility, loss of flesh, mental dulness, palpitations, shallowness of breathing, blue line. The water was found to contain 0.42 grain of lead per imperial gallon; the urine .28 grain per imperial gallon.

CASE 7.—D., female, aged 42. Symptoms: Headache, backache, pain in the bowels, constipation, pale lips, coated tongue, anorexia, dyspepsia, general weakness, listlessness, mental confusion, impairment of vision, palpitation, cachectic appearance, red line (not blue) on the gums. The drinking-water was found to have contained lead.

CASES 8-11.—Three workmen,²⁰ working in the same shop, had decided symptoms of lead poisoning—colic, constipation, blue line on the gums, etc.; all three drank water from the same tap. The water was found to contain 0.3 grain of lead per gallon.

CASE 12.—A workman.²¹ There was a well-marked history of colicky attacks, constipation and ill-health for four months previously. He had a well-marked blue line on the gums, weakness of his right wrist, etc.; the drinking-water he used was found to contain 0.08 grain of lead per imperial gallon.

CASE 13.—A scissors smith.²² History of ill health and severe attacks of colic. He had the blue line, cachexia and albuminuria. The water he used was found to contain 0.07 grain of lead per gallon.

CASE 14.—A domestic servant.²³ Never used lead for any purpose. History of palpitation, shortness of breath, and increasing nervousness. She was anæmic, had a sweet taste in the mouth and a blue line on the gums. The water she used contained 0.28 grain of lead per gallon.

CASE 15.—Dr. Abbott reports a case²⁴ in which the toxicologic effects of lead were developed by water containing one-eighth of a grain of lead per gallon.

CASE 16.—Mechanic,²⁵ 42, at Keighby, died with symptoms indicative of chronic lead poisoning, induced by drinking the town water, which was found to contain three-fifths of a grain of lead per gallon. For six weeks he had been out of health, and a week before his death he suffered from colic, vomiting and constipation. There was a blue line on his gums. Occasionally he had epileptiform attacks. After death the kidneys were found granular and the heart somewhat enlarged.

CASES 17-29, inclusive.—Louis Philippe's household in Claremont, exiles from Paris, were poisoned after the lapse of seven months, by drinking water containing 0.07 of a grain of lead per gallon.²⁶ Or, as Dr. S. L. Dana reports,²⁷

²⁰ Dr. W. S. Porter, *Med. Press and Circular*, 1886, p. 140.

²¹ *Med. Press and Circular*, 1886, p. 141.

²² *Ibid.*, p. 142.

²³ *Ibid.*, p. 143.

²⁴ *Bost. Med. and Surgical Journal*, Vol. XCIV., p. 42.

²⁵ Blyth, *On Poisons*, 1885, Vol. II., p. 543.

²⁶ Report of State Board of Health of Mass., 1871.

²⁷ *Trans. of the Amer. Med. Assoc.*, 1852, p. 235.

0.62 gr. per gallon. Out of 38 cases, 13 were poisoned, most of whom presented a blue line on the gums. All suffered from colic, nausea, vomiting, constipation, jaundice and nervous disturbances simulating hysteria. The water was drawn through a lead pipe from an iron cistern.²⁸

WHOLESALE POISONING BY LEAD.

CASE 30.—During the year of 1857 several persons died at Norwich, Conn., lead having been suspected as the cause, introduced into the system with water supplied from "Kenney's aqueduct." The *Norwich Courier* says: "The worst fears are confirmed. A quantity of this water was sent to Dr. James R. Chilton, chemist, of New York, for analysis. He stated that it contained lead in solution, in the proportion, as near as he could estimate, of four grains of lead per gallon of water." The *Courier* further says: "The aqueduct which has thus been doing its work of death has been in operation for many years — probably not less than twenty-five — and how many, young and old, have gone within that period to premature graves, no one can tell. But busy memory in the minds of those most familiar with the history of families residing on Church and Washington streets recalls cases after cases of death, the symptoms of which point to the poisoned water of this aqueduct as the cause."

CASE 31.—In 1814 a pipe of lead was laid to conduct water for a quarter of a mile to Tunbridge, Eng., for the use of those who chose to take it. About a year after the water was used, a great many cases of colic, and one at least of paralysis, evidently lead disease, appeared. Iron was then substituted for the lead pipe, and the maladies disappeared. The quantity of lead was almost inappreciable, and escaped the acute analytical test of some of the best chemists of that day. Professor Brande, of the Royal Institution, however, has found lead in the water. This water was analyzed by the celebrated chemist, Dr. Thomas Thompson, who found it remarkably pure, containing $\frac{1}{38000}$ of saline matter, three-fourths of which were chlorid of sodium.²⁹

CASE 32.—Van Swieten has seen a whole family attacked with lead colic, from having used, in the preparation of their food, water which has been in a lead vessel.³⁰

CASE 33.—Tronchin has observed³¹ that lead colic, so common in his time among the inhabitants of Amsterdam, was caused by their using rain water, which has remained in cisterns lined with lead, or upon the flat roofs of the houses, which were also covered with the same metal.

CASE 34.—Van Trootswyk has observed that the waters of Haarlem, collected in the same way as those of Amsterdam, occasioned the same disorders.³²

CASE 35.—Wall³³ has seen all the residents on a farm attacked with colica pinctonum, from drinking water from a pump, the cistern of which, and the pipe, were lined with lead. This metal, in the course of three years, was known to have been in a great part destroyed and mixed with the water. By the advice of Wall, the farmers used other water not in contact with lead; from that time on they were not attacked with colic.

CASES 36-55, inclusive.—Twenty girls³⁴ have had lead colic, some emacia-

²⁸ For more particulars of these cases, vide *Trans. Amer. Med. Assoc.*, Vol. V.

²⁹ Tanquerel des Planches' Lead Diseases, trans. by S. L. Dana.

³⁰ *Ibid.*

³¹ *Ibid.*

³² Tanquerel des Planches' Lead Diseases, trans. by S. L. Dana.

³³ *Ibid.*

³⁴ London *Lancet*, 1851, Vol. I.

tion and other ailments, all of which have been living in the same place, *i. e.*, in a school building. All conditions were favorable to good health, such as hygiene, diet, drink, etc., and notwithstanding all proper precautions and care, change of diet, etc., their conditions have not improved. When, finally, Dr. Robertson directed his attention to a leaden cistern which contained water for the supply of the girls' washing place. The children were in the habit of drinking this water when they had no fresh well-water at hand. On examining the filtered water, a very small quantity of lead was found in it, so small that, at the first analysis made, it escaped detection; however, its presence was ascertained after testing several samples. The use of the water was dispensed with, and the children all returned to good health within three weeks, and no further attacks occurred.

CASE 56.—In a garrison of U. S. soldiers at Fort Delaware, numerous violent cases of lead colic occurred, owing to the use of water collected in cisterns from a large painted roof.³⁵

CASE 57.—The crew³⁶ of an East Indian packet having been put on short allowance of water, in consequence of being delayed by contrary winds, the men got their shares each in a bottle; but the officers united their shares and kept it all in a lead cistern. In three weeks all the officers began to suffer from stomach and bowel complaints, and had lead colic for six weeks; while the men continued to enjoy good health. The surgeon at length detected lead in the water, without concentrating it, by adding to it the sulphuret of potash.

CASES 116, 117.—Two families in New Bedford, Mass., were affected with lead colic, traced to the use of drinking-water contaminated with lead.³⁷

CASE 118.—In New Orleans the inhabitants have suffered greatly from lead affections, due mainly to lead in the drinking-water. See Reports,³⁸ by Dr. Fenner, of 1849 and 1850, on Lead Poisoning and Epidemic Colic.

In Cincinnati, according to Dr. R. Jay Kuttredge (*vide* Southern Medical Reports, Vol. I.), lead diseases are not infrequently met with. And notable quantities of lead were found in the water drawn through lead pipes.³⁹

(*To be continued.*)

Vaccination in England and Scotland. In England, the great part of the work of vaccination — about one-half in London and about two-thirds in the provinces — is done by the public vaccinator, a medical man who attends weekly at a station, where he operates on all who come to him. The work of public vaccinators is supervised by the staff of medical inspectors attached to the Local Government Board. A great part of the vaccinal duty of these inspectors consists in seeing that the work done by the public vaccinators reaches a high standard of efficiency.—(*Med. Press and Circular.*)

³⁵ Wood's Practice of Medicine, 1852, Vol. I., p. 626.

³⁶ Christison, On Poisons, 1845, p. 413.

³⁷ *Trans. of the Amer. Med. Assoc.*, Vol. V.

³⁸ Southern Medical Journals.

³⁹ Dr. S. L. Dana, *Bost. Med. and Surg. Jour.*, Nov. 9, 1842.

TALKS TO GENERAL PRACTITIONERS.

DIAGNOSIS OF GONORRHEA IN WOMEN.

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WOMEN frequently have a gonorrheal discharge from the vagina, and, not knowing the nature of the discharge, remain indifferent. In this respect the contrast with the male is marked, for with the latter a discharge from the urethra is always a matter of anxiety. An acute gonorrhea in the female, if confined to the os and cervix uteri or vagina, may pass unnoticed. This has been observed by me in some cases when the disease had been conveyed by the husband. However, the urethra is generally involved, and it is for this phase of the disease that the physician is consulted. If no examination is made by the physician, the burning and desire for frequent urination soon passes off, if an alkali has been prescribed, and neither physician nor patient knows the character of the trouble, and hence no precautions are observed. It is a mistake to expect to find swollen labiæ and difficult locomotion, unless Bartholinitis exists, followed by profuse discharge in the cases of gonorrhea in women as they ordinarily present themselves. Indeed, cases of simple leucorrhea may present a more profuse discharge than is found in the gonorrheal ones. The profuse discharge and swollen labiæ are only found in virgins or children who have vulvitis in addition to the other manifestations of the disease. In these latter cases the hair covering the mons veneris, in those old enough, will be found matted.

A recent contributor says: "The diagnosis of acute gonorrhea in the female is comparatively easy, even without the microscope. What with a history of impure coitus, free purulent discharge from the vulva, vagina and urethra, intertrigo, burning on micturition, and vesical tenesmus, the diagnosis is not far to seek. * * * Erosion may be present upon the skin, upon the labia majora, or in the inguinal and gluteal folds. The labia minora, the clitoris and its prepuce, and the hymen, if present, are red and swollen. The meatus urinarius is found to be ectropic and congested. * * * The mouths of the ducts of the Bartholinian vulvovaginal glands are deeper in color, gaping and tender." It is true, if the majority of cases presented the above *typical and full* symptoms, the diagnosis would be easy; but they do not. If the gonococcus is found, the diagnosis is positive. But it is not to be supposed that the vast majority of general practitioners are prepared to examine for the gonococcus, for it requires practice before one is able to recognize the germ, and in cases that are not recent, where the urethritis is recovered from, and where douching of the vagina has been practised, we

must form our diagnosis from the clinical history, from direct observation and experience, as at this time the gonococcus is difficult to detect.

When children are brought with vulvitis and urethritis, it is not proper to infer that they have been the victims of an assault. The infection in these cases is often the result of sitting upon a vessel previously used by one having gonorrhea. I recall the case of a mother who was suffering, unknowingly, from a gonorrhea derived from the husband. She, with her two little daughters, used a slop-jar in common, and all were infected.

When mothers bring their female children to the dispensary for treatment for genital discharge, it can generally be ascertained that they themselves have or have had painful urination and give a history of vaginal discharge.

If women, especially married ones, present themselves, and gonorrhea is suspected from the subjective symptoms, it is well to carry the investigation a little further, but in a way not to arouse the suspicion of the patient, for it is not the function of the physician to create domestic troubles. In an indifferent manner the patient might be asked whether her discharge in any way produces discomfort or a discharge in the husband. If the husband has a discharge, it will help clear up the diagnosis and at the same time warn us to be guarded in our remarks. On objective, or direct, examination—unless the patient has thoroughly douched the genitals immediately before presenting herself, and if such should be the case, she must be enjoined, when she again presents herself, to abstain from the douche that day — the first thing to observe will be the amount and character of the discharge, then the condition of the ducts and glands of Bartholin, then the urethra, and, finally, the os and cervix uteri. If the case is one of gonorrhea, as before noted, the amount of discharge from the vagina may be but moderate, the ducts leading to the glands of Bartholin, on pressure, may discharge a purulent or muco-purulent secretion, but if the gland is acutely inflamed, the patient will be obliged to remain upon her back, for under such condition locomotion is impossible, owing to the large pear-shaped and painful swelling. On inspecting the meatus, or by pressure, a drop of pus is observed. Then, with a speculum introduced into the vagina, and this can usually be accomplished, unless in the case of children or those unused to copulation, a discharge will be noticed at the os, with congestion or erosion about the same; the cervix will be covered with a tenacious secretion, and, as the speculum is being opened, a teaspoonful or more of thick pus will well up into the posterior blade of the speculum from the cul-de-sac behind the cervix, where it accumulates. The pus from the urethra does not always present itself immediately, neither is the meatus always swollen and pouting, but if the urethra is “milked” from above, the pus will present at the meatus. If there is no history of traumatism, the urethritis and Bartholinitis are pretty sure to be of gonorrheal origin.

To show how necessary it is to be thorough in our examination, I will narrate the following instance: A married man consulted me, and, on

examination, he proved to have a typical gonorrhea. He denied intercourse with others than his wife. When he asked for a diagnosis, I told him it was *urethritis*; and if he discovered that his wife had leucorrhea, that she, as well as himself, must recover before any further intercourse should take place. On the following day, a comely female called at my office and inquired as to the character of her husband's trouble. Having satisfied myself that the husband was free from wrong-doing, I told her promptly that it was gonorrhea. She then asked me how he contracted it. I stated that I did not know, as he had not had intercourse with any other woman. She became indignant, and insisted that I should examine her there and then, as there was nothing wrong with her. On examination, I observed that she had thoroughly cleansed herself, the vulva and vagina were dry, there was no pus presenting at the meatus, but, by stroking the urethra, a large drop of pus was brought into view (she had evidently not urinated lately). This I caught on a piece of cotton and showed it to her, with the statement that she was not free from disease. I did not have an opportunity to examine the os uteri, for she jumped from the chair and made a hasty departure.

I have said nothing about gonorrhea of the endometrium, tubes, etc., for I presume that these complications will be included in the gynecological "Talks." I wish at this time, however, to draw attention to the fact that occasionally, when the endometrium is involved, there may exist an acute metritis.

THE APPLICATION OF ASEPSIS AND ANTISEPSIS TO GENERAL PRACTICE.

BY CHARLES LESTER LEONARD, A.M., M.D.,

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. THE recent controversy regarding the merits of asepsis and antiseptics has established the fact that both have their place and sphere of usefulness.

Asepsis, or the prevention of infection, without the employment of antiseptic agents or germicides, is the ideal. By it we endeavor to aid nature in producing a perfect healing. It should always be employed in operations where the tissues are free from infection. The employment of the aseptic technic in place of the antiseptic saves the wound not only from infection, but also from the irritation and even slight superficial sloughing that has been shown to follow the use of the chemical agents generally employed as antiseptics.

The combination of antiseptics with asepsis is, however, necessary, since it is impossible to sterilize the field of operation or the hands of the surgeon and of his assistants in any other manner than by the employment of chemical antiseptics.

In cases where suppuration is absent, you should employ asepsis, only employing such antiseptics as are necessary in sterilizing the field of operation. They should be kept out of the wound itself, as those that have any considerable power injure the vitality and reconstructive forces of the tissues and hinder rapid healing. It is an essential of aseptic healing that wounds should be as dry as possible. Antiseptics add moisture, and, in addition, their necrotic action on tissue, though it is only superficial, supplies food for any bacteria that may remain behind, while the necessity of its resorption delays union.

Where marked infection is present, you will find it necessary to employ antiseptics in destroying the infecting bacteria that are already present, while in some instances the abscess cavity or depths of the wound will have to be packed with gauze wrung out of a weak antiseptic solution. Wherever it is necessary to use antiseptic solutions for irrigating, they must not be too strong, or their action upon the tissues will be more harmful than beneficial. In all cases they should be thoroughly washed away with sterile water or a sterilized normal salt solution, six-tenths of one per cent.

Infection we know to be concurrent with the presence of certain kinds of bacteria that are present even after ordinary means of cleansing have been employed. Asepsis means surgical cleanliness or the freedom from bacteria capable of infecting. Antiseptics is the antagonism of sepsis, or a method of destroying bacteria that are present, of preventing further infection or the development and growth of those that may chance to remain.

In general terms, your object should always be to assist nature as much as possible; preventing infection without retarding her reparative processes, where you can, by employing asepsis, but giving her vigorous aid where it is needed, making a free outlet for pus and employing antiseptic agents that will antagonize septic processes where they are indicated.

Whether asepsis or antiseptics is employed, it is essential that the wound or abscess cavity be made as dry as possible. The presence of moisture or cavities in which serum and blood-clots can collect are all favorable to the production of septic infection. The conditions necessary for the development of bacteria are moisture, food and warmth. Two of these requirements are thus furnished, while the warmth of the body is the third.

The methods commonly employed to obtain asepsis are: boiling, steam, steam under pressure, and dry heat.

Boiling is the most certain and rapid method of sterilization, as all the more common forms of bacteria can be destroyed in twenty minutes, or even less time. Its usefulness is, however, limited, as it can only be employed where the object to be rendered aseptic is capable of withstanding the action of boiling water. Its chief application is, therefore, found in the sterilization of instruments. Modern instruments are so made that they can be boiled without injury. The efficiency of this method is increased by adding a heaping teaspoonful of carbonate of soda to each quart of water.

It is impossible to sterilize organic tissues by this method in many

instances, while, where it is applicable, the necessary moisture remaining in cloths, dressings, etc., reduces their absorptive power. Steam sterilization has, therefore, been substituted, and has been found to be as efficient. It does not produce the absolute sterilization of the bacteriological laboratory, but you will find it sufficient for all ordinary requirements, as all bacteria are destroyed that do not form spores. Some form of apparatus is required that partially confines the steam, and maintains a temperature of 212° F. for twenty minutes in the chamber containing the material to be sterilized. The Arnold steam sterilizer is the one most commonly employed for this purpose in this country. It, however, has the disadvantage of being rather bulky for transportation. One that I had made for my own use, and that



I, as well as others, have employed for some years with satisfaction, is shown in the accompanying illustration. The lower portion is used for boiling the instruments, while the upper portion has a wire gauze bottom and serves as a steam chamber in which the towels, aprons and gauze to be used in the operation may be sterilized. The upper portion inverts and telescopes within the lower, and thus forms a compact and convenient case for carrying the instruments. Instruments can, however, be boiled in any convenient dish that has previously been cleansed by boiling with washing soda.

Steam sterilization under pressure is the most efficient method now known that is compatible with the preservation of materials to be sterilized. The apparatus essential to its employment is, however, too costly to make it applicable in the field now under consideration.

Dry heat is more of a laboratory method, and is only of practical utility in rendering aseptic the glassware used in bacteriological laboratories.

Antisepsis is the antagonism of sepsis and the method of destroying bacteria that produce it. Antiseptics or germicides are chemical agents that are employed to destroy bacteria. Some of those that are most commonly

employed are: Bichlorid of mercury, carbolic acid, boracic acid, permanganate of potassium, and a newer and apparently most valuable one, the soluble silver salts.

The convenient tablet form in which the bichlorid of mercury is prepared has made the employment of this antiseptic very convenient. Although there has been some doubt expressed regarding its efficiency, clinical experience has placed the consensus of opinion strongly in its favor. The action of the bichlorid by itself is impaired by its effect upon albumen and the combination of acetic acid with it, or some other similar agents, as found in most prepared tablets, is of distinct advantage, while the addition of common salt prevents its precipitation. It is employed in solutions varying in strength from 1-1000 to 1-10,000.

Carbolic acid, while a convenient antiseptic and one that has considerable activity, is to be employed with care, as many instances of its untoward action have been reported. It is capable of producing poisoning by absorption, and if it is employed in wet dressings on the extremities there is always danger of producing gangrene. Many cases of this nature have been reported. You should be very careful if you ever employ it. The solutions in use vary in strength from 1-40 to 1-100.

Boracic acid is considered by many nearly useless as an antiseptic, and yet clinical evidence shows it to have a distinct value. It is non-irritating and non-poisonous. These qualities make it especially useful in operations on the face and mouth. A saturated solution is used. In the form of a dry powder, the fine crystalline boracic acid makes an admirable dusting powder and forms an artificial, aseptic, dry scab over the wound. It has been suggested that it acts by preventing the development of bacteria. Whatever its action, you will find it a valuable agent, especially where asepsis has been employed during the operation and you desire to keep the wound aseptic and free from irritation. The relative value of various dusting powders as antiseptic agents, we will consider at another time.

Permanganate of potassium is apparently a very energetic germicide. Its action is probably due to its strong oxidizing power. You will find it very efficient in cases of chronic, indolent ulcers. Its vigorous action destroys the bacteria present and stimulates the tissues. Its efficiency is enhanced by a subsequent washing with an oxalic acid solution. I would advise you to employ this agent, as I shall describe in the sterilization of the hands, whenever your hands have become infected by a grave septic case. You will find it a safeguard against the transmission of infection. It is employed in solutions of 1-20 to 1-100, according to the intensity of the action desired.

The employment of certain soluble salts of silver, as lately introduced as antiseptics by Credé, of Dresden, seems to open up a new era of antiseptic surgery. Clinical research and experience point to a marked step in advance in these drugs, as they seem to fulfil the requirements of an antiseptic more perfectly than any agent hitherto employed. It is too soon, however, to

recommend their general employment, and they must await the verdict of time.

I have described for you the different methods and agents employed in producing asepsis and antiseptis, and have said that these methods must be combined in operating. How this is done, and the process and technic employed in preparing for, and during an operation, in a private house, will be the subject of my next "talk."

You can readily test the value of antiseptic methods by substituting the antiseptic poultice or fomentation for the old type. The conditions necessary for growth and development of the bacteria that produce suppuration are heat, moisture, and a culture media or food. The old mush or flaxseed poultice furnishes these in perfection. In the treatment of inflammation by poultices, we desire to employ moist heat to relieve the pain and stimulate the local circulation. These results can be attained in a much simpler manner, and with surgical cleanliness, by the use of the antiseptic poultice. It furnishes the heat and moisture essential to this mode of treatment without furnishing the food material in which the bacteria can grow and multiply. On the contrary, the antiseptic poultice has in it a germicide that destroys the bacteria that are found upon the skin, and thus prevents a mixed infection when the abscess chances to break. Where there is an open wound, it sterilizes the discharge and decreases the infection in the wound. It thus decreases rather than adds to the infection present.

The antiseptic poultice is made by soaking absorbent cotton, or any cloth that will readily absorb discharges, if there are any, in an antiseptic solution, as bichlorid of mercury 1-3000, or stronger if the patient's skin will permit. The moisture thus furnished is retained by placing over the cloth a water-proof covering, mackintosh, rubber dam, gutta-percha tissue, oiled silk or parafined paper. This water-proof layer also prevents the heat, which is furnished by the body, from escaping. The cloth can be kept moist by the occasional addition of a little of the antiseptic solution; it should be renewed whenever it becomes soaked with discharges.

If you employ this poultice in the place of those commonly employed, you will be gratified with the results attained, and convinced of the value of antiseptic methods.

TESTING VISION AND ACCOMMODATION.

BY WALTER L. PYLE, A.M., M.D.,

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THE articles required are: 1. A series of *test-letters* so arranged that they subtend an angle of 5" at varying distances from 4 to 60 meters. 2. A *reading-card* of type whose letters subtend the same angle from 0.5 to 2 meters. The 0.75 meter type is about the size of the ordinary newspaper type.

These cards may be procured for a merely nominal sum at any optical store.

MODE OF PROCEDURE.—The large card of test-letters is fastened to a hook or nail about 6 feet from the floor, and about 6 meters (20 feet) from the chair in which the patient is seated. The letters of the 6-meter line are about on the level with the patient's eye. The card must be well illuminated by daylight or artificial light. The 6-meter distance is not necessary, 4 meters will answer, but in this case we must bear in mind that the patient should read several lines lower.

Always examine each eye separately. Seat the patient facing the card; direct his attention to the test-letters; cover the left eye with a small card and ask him to read on the card as low down as possible. Note the lowest line read correctly or nearly so, and then cover the right eye and test the left in a similar manner. Register the findings as follows: Use 6 as the numerator and the number of meters at the side of the lowest line read as the denominator. This gives the *visual fraction*. For instance, if the patient reads the line marked 12 m. (that is, consisting of letters subtending an angle of 5" at 12 meters) his visual fraction is $\frac{6}{12}$. Any fraction below $\frac{6}{6}$ indicates defective vision.

But it must be borne in mind that *the mere fact of the patient reading the $\frac{6}{6}$ line is no assurance of the absence of refractive error*. The patient may be hyperopic and astigmatic (if in youth, to a very considerable extent), and still read the $\frac{6}{6}$ line by means of extra accommodation, and it is this very extra strain that causes the distressing asthenopic symptoms. This can only be definitely determined by use of a mydriatic.

If the patient already wears glasses and with them he cannot read with each eye separately, $\frac{6}{6}$, he should consult an oculist. If there is considerable discrepancy of vision in the two eyes, there is great likelihood of eye-strain.

If the symptoms cannot be traced to any other cause, or if the patient uses the eyes excessively or viciously, or if the symptoms are especially referred to the eye, even though the vision appears normal, or properly corrected with glasses, the physician should put one drop of a gr. ij to 3j homatropine solution into *one* eye every five minutes for a half hour, and then if the vision falls to any great extent, the patient is ametropic, likely simple hyperopic or hyperopic and astigmatic. Simple myopic persons see about as well at a distance under a mydriatic as with the accommodation functional.

If the patient is young or is not compelled to use the eyes in his daily vocation and complains of persistent eye-pain or headache untraceable to other causes, the eyes should be put at rest under atropine for ten days, and tested. This is accomplished by the installation daily for two days of one drop of a gr. iv to 3j solution of atropine into each eye. If the vision falls under the mydriasis, or if the symptoms are relieved, the diagnosis of eye-strain is positive.

TESTING ACCOMMODATION.—The small reading test-card is brought

slowly up before each eye separately, the other being covered, and the patient is told to fix his gaze on the 0.50 meter type. If he is younger than 21, he should be able to read the 0.50 type easily at from 5 to 7 inches distance, otherwise he is considerably hyperopic or has some extra disturbance with the ciliary muscle, and his case is one for a specialist. If the patient is middle-aged and cannot see the 0.50 type easily at 10-12 inches, he is either presbyopic or hyperopic, and is in need of reading glasses. If there is a discrepancy in the reading-power of the two eyes, the case is especially one for an oculist. If the patient has very poor distant vision, but can read the type easily at 5 inches, he is a myopic.

If the patient is already wearing reading glasses and the type cannot be read easily with each eye at 10-12 inches, his glasses are not strong enough. If he cannot read the 0.50 type with his glasses at a distance of at least 14 inches, his glasses are too strong.

THE PREPARATION NEEDED FOR A CASE OF LABOR.

BY DOWLING BENJAMIN, M.D.

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IN New York alone, from 1886 to 1887, there were 3,342 deaths from causes incident to child bearing. Of these, 1,947 were due to child-bed fever, or infection during the lying-in period. (See Pepper's System of Medicine, Vol. I.)

Fully half of the deaths, therefore, that occur at the confinement period are due to infection, septicemia, or blood-poisoning, in consequence of germs getting into the system through the abrasions caused by parturition. And you must also remember that, aside from any other lesion, there is always, after every confinement, a large, raw surface left on the interior of the womb by the separation of the afterbirth, which is one of the most dangerous culture fields for the growth of disease germs, and permits their ready entrance into the woman's system.

For the proper and successful care, therefore, of a mother at this important period of her life, it is of the *greatest* consequence that you not only understand but apply the principles of asepsis.

Since the alert members of the profession have thoroughly comprehended this subject, child-bed fever has been so rapidly diminished in frequency as to arouse the hope of causing, ultimately, a case to be considered a rare curiosity. During a practice of twenty years, in which I have endeavored to apply the principles of antisepsis, I have had but one case of puerperal fever, and that, fortunately, recovered.

How, then, shall we proceed to secure our patients against the dangers of sepsis? Call upon your patient shortly after having been engaged, and

explain to her the importance of this subject, and, as well as you can, briefly the principles involved. Then give her the following directions:

1. Keep away, if possible, from all contagious and infectious diseases.
2. Avoid sores (wounds included), and especially erysipelas.
3. Warn her to advise you of any abnormal symptoms, such as headache, dizzy spells, swelled feet, etc., which might point to albuminuria or other dangers.

4. Tell her to have on hand, as soon as the first symptoms of labor begin, or before, if possible, two or three gallons of sterilized water (either boiled or distilled) in a sterilized boiler or pitcher, properly covered from the dust. This must not be cooled by adding cold, unsterilized water — a thing that unskilled attendants will be very apt to do unless you watch them. Even the baths that a patient takes before or after confinement should be in sterilized water, or, at least, aseptic water, and since many cities take their water supply from streams into which their sewage is emptied, this is difficult to do unless the infected water be boiled.

5. All water used in the lying-in room must be sterilized. Also remember that your hands or anything else can be washed much cleaner in a stream that is poured from a pitcher, than if they are dipped into a basin containing the dirty water in which they have been washed, even though no discoloration can be seen in the water.

6. Everything to be used about the patient and bed in the way of clothing, etc., must be washed, boiled, and ironed, wrapped up from the dust in a paper and put away to be ready for use when the time comes. (The conditions present, and the antiseptic preparations, are essentially the same as you would expect to have in a surgical operation.)

7. She must have at least one dozen aseptic pieces of muslin, about fifteen inches square, boiled, washed, and ironed (an old sheet torn up will do), wrapped up in paper and put away to be used for wiping away the discharges, for wash rags, napkins, etc.

8. One large pad, about one yard and a half square, made of cheesecloth, that has been boiled in water containing a small quantity of soda, and stuffed with new cotton, or, what is better, absorbent cotton. If ordinary cotton is used, it will have to be baked for an hour, to secure sterilization.

About a pound and a half of cotton will be enough, although two pounds would not be too much. This is to place under the patient during confinement, first, second and third stages; and must be removed soon after the first stage, to be replaced by a lighter one, also sterilized. Everything, of course, if the least bit soiled, must be removed from the patient, bed and child, promptly, lest culture fields be formed for germs.

9. One sheet of impervious cloth, about a yard and a half square, to be put next to the mattress for its protection.

10. One maternity binder, about eighteen inches wide and long enough to go around the patient, sterilized.

11. One piece of sterilized soap, hydronaphthol or carbolized.
12. One new sterilized syringe, "Household No. 3" or "Fountain" will do.
13. Two-ounce box of antiseptic cosmoline or sweet oil.
14. One skein of sterilized silk floss.

This much preparation, at least, I have always been in the habit of ordering my patients to make, and this is within the reach of those of the most ordinary means. These things should all be wrapped up properly from the dust, so that they may all be found without confusion when the time comes.

For a more complete and perfect outfit you are referred to the maternity outfit or antiseptic obstetrical case, which is made in accordance with my directions by Beringer, of Camden, N. J. The adoption generally of the precautions herein suggested and urged will introduce an era in obstetrical practice, marked by a lower death rate than that of any preceding period. In the lying-in room, of course, the nurse should be the picture of neatness, cleanliness, and a pattern of aseptic practice.

By this careful preparation we will generally be able to avoid that unfortunate and fatal affliction of motherhood, puerperal fever.

SOME OFTEN-NEGLECTED POINTS IN EXAMINATIONS OF THE URINE.

BY BOARDMAN REED, M.D.,

Philadelphia.

To examine the urine for albumen and sugar merely is much better than not to examine it at all. Even to take the specific gravity and make the Heller's or the heat and nitric acid test for albumen may afford valuable information in the management of a case. But you should do a great deal more with the urine when the patient is chronically out of health. For, a high specific gravity alone by no means proves the presence of sugar, nor a low specific gravity renal inadequacy, and albumen without casts does not necessarily signify Bright's disease. Nor does the absence of both albumen and casts at a single examination exclude the possibility of diseased kidneys. And the urine very often presents other abnormal conditions which indicate disease in other organs than the kidneys. These are trite truths for experts in physical diagnosis, but need to be emphasized for many others.

Unfortunately, the older teachings on this subject were deficient. A recent medical writer of more than ordinary prominence and ability in very properly calling attention to the importance of more frequent analyses of the urine, names the following as the only points concerning which it is necessary in most cases to examine: "Quantity, color, clearness, odor, reac-

tion, specific gravity, albumen, sugar, sediment." This list does not include indican, the degree of acidity, the total amount of solids excreted in twenty-four hours, or even the amount of the familiar uric acid, all of which are most important.

In my laboratory, out of many hundreds of urinary analyses made during the past year, albumen was present in two cases and sugar in one only. On the other hand, in fully one-half the cases an excess of indican was found. This indicanuria is most frequently a consequence of excessive putrefaction in the intestines, which usually involves more or less auto-intoxication and many resulting nervous symptoms, often of a serious and distressing character. It has also been observed in unhealthy pleuritic exudation and in peritonitis with putrid pus (Von Jaksch). The same author cites Hochsinger as having found that the urine of new-born children was free from indican and that in healthy infants it occurs only in traces. According to the latter observer, "it becomes more abundant in intestinal disorders, and is always most so when these are attended by diarrhea." My own experience fully confirms this last observation of Hochsinger. The latter recorded also that "tuberculosis, whether affecting the intestinal tract or not, was always accompanied by profuse indicanuria."

The ether-sulphuric acid compounds generally, or aromatic sulphates, when present in the urine, have a significance similar to that of indican, but the methods of detecting them are complicated and tedious — scarcely practicable except in well-equipped laboratories.

In a considerable proportion of my cases there has been revealed also an abnormally high total acidity, made up largely, as a rule, of uric acid and the products of fermentation. Patients with over-acid urine are apt to be sufferers from intestinal indigestion, constipation, rheumatism, neuralgia, headaches or insomnia, and often several of these ailments, as well as a variety of nervous symptoms. Not till the excessively acid condition of the system has been relieved by improving the digestion, by alkaline diuretics and an appropriate diet, including an abundance of pure water, do the patients make any substantial improvement in health.

The falling of the total amount of solids passed by the kidneys in twenty-four hours, below an average of 1,000 grains in a person weighing 140 pounds or upward, indicates a depression of the renal function. If repeated tests always show a markedly diminished excretion of solids after the institution of measures to increase it, there is reason to suspect beginning chronic interstitial nephritis, even though there are no decided symptoms and no albumen or casts.

Uric acid excess is one of the most common as well as one of the most harmful morbid conditions that may be revealed by a thorough examination of the urine. Without going to the length that Haig does in attributing a very large proportion of chronic internal diseases to this one pestiferous

product, it must be admitted that its presence in the system in unusually large amounts is always accompanied by decidedly unpleasant and often by most distressing symptoms, which may be ultimately very dangerous to life.

Certainly, then, you will agree that these are all points which should by no means be neglected in examining the urine.

It was not my original intention to give any detailed account here of the methods by which one may decide when there is indicanuria, uricacidemia, a deficient secretion of solids, or an excessive total acidity, since Tyson, Musser, Von Noorden, Von Jaksch, Purdy and all the recent standard authors on urinalysis or physical diagnosis describe them; but it will doubtless be a convenience to numerous physicians to have the more simple tests briefly described in this connection.

TEST FOR INDICAN.

There are many tests for indican, most of which are rather complicated to be serviceable to the busy general practitioner. By the following method, however, it is easy to decide almost instantly whether there is present any notable excess of indican:

Pour into a small test-tube a drachm of pure concentrated hydrochloric acid and add about thirty drops of the urine to be tested. Shake the mixture or stir with a glass rod. If there should be a decided excess of indican, a purplish blue or violet tint will appear within a minute or two. If such a reaction does not occur, add one to three drops of strong fuming nitric acid. If this should not develop one of the above-mentioned colors, there is no indicanuria.

TEST FOR THE TOTAL AMOUNT OF SOLIDS.

A rough and hasty but sufficiently accurate way of estimating the total amount of solids excreted by the kidneys in twenty-four hours is as follows:

Have all the urine passed from, say, 8 A.M. one day to 7 A.M. the next, saved, measured and the number of ounces noted. Then multiply the number of ounces by the last two figures that represent the specific gravity of a sample out of the entire collected urine and add to the product one-tenth of itself. For example, if 50 ounces of urine were passed in the aggregate during one day and night and the specific gravity of a sample taken out of the collection were 1,020, this would be the calculation:

$50 \times 20 = 1,000$. Then, adding one-tenth of $1,000 = 100$, would make 1,100, representing approximately the number of grains of solid matters excreted. This would be normal for a person weighing from 130 to 140 pounds. Those weighing less or more should excrete relatively less or more solids. After middle age the ratio of excretion is usually found somewhat diminished.

TESTS FOR URIC ACID.

As to uric acid, a copious deposit of red sand in the vessel in which urine has stood for three or four hours only, points usually to excessive excretion of this substance, though a very decided acidity of the urine from other causes, such as abundant fermentation in the gastro-intestinal tract, or a marked scantiness of the urine, may lead to such a large precipitation of uric acid, even when only a moderate proportion of it is being excreted. The lower powers of the microscope will also reveal a great number of uric-acid crystals under the same conditions.

A quantitative test for uric acid which is scientifically accurate and delicate, and at the same time rapid and simple, has yet to be discovered.

The following method of Heintz, which gives fairly reliable results for clinical purposes, is the easiest and simplest of all, and yet even this involves a long delay in reaching the result.

Take 200 cubic centimeters of urine, and add to it 10 cubic centimeters of hydrochloric acid. Let stand for 24 hours (better 48 hours) in a cool room. Collect the precipitated uric-acid crystals on a previously-weighed filter, and wash with cold distilled water. Dry the filter and uric-acid crystals in a desiccator (or it will dry in a few hours in any warm place), and weigh. By subtracting the weight of the filter, the result will be the weight of the uric acid in 200 cubic centimeters of urine. If albumen be present, it should first be removed, and the urine should always be filtered before applying the test, otherwise subsequent filtration is very difficult.

TEST FOR THE TOTAL ACIDITY.

As to determining the degree of acidity or amount of total acidity in urine, it is a markedly simple and rapid procedure when one knows how, and it requires in the way of apparatus merely an inexpensive burette, or long glass tube graduated to tenths or fifths of a cubic centimeter, a graduated cubic centimeter measure, and a small glass cup or tumbler holding two to four ounces. There are required also a one-tenth normal (decinormal) solution of caustic soda and a one per cent. alcoholic solution of phenolphthalein, both to be obtained of most wholesale chemists. Partly fill the burette with the soda solution and note down the reading or exact figure opposite the upper limit of the solution, and for this purpose it is the rule to consider the bottom rather than the top of the curve which liquid always assumes in a tube at its upper end. Measure out and place in the glass receptacle 10 c.c. of the urine and add to it one or two drops of the phenolphthalein. Then add, drop by drop, the soda solution from the burette until the red color thus produced no longer disappears upon shaking. A uniform pale red color will now tinge the entire 10 c.c. of urine, indicating that the acidity of the latter is about neutralized. The best authorities advise that one should go on continuously adding further drops of the soda solution until the red color is no longer deepened by each drop as it falls

into the liquid. Then read the burette again and subtract the figure from that first obtained, multiply the remainder by 10, and the product is the total acidity. In the absence of a burette with its lower end so arranged as to allow the escape of the contents drop by drop, one may get on quite well by first placing a measured amount of the soda solution in any receptacle, and then taking up in an ordinary rubber-topped pipette and dropping out of this into the measured urine so much of the soda solution as is necessary to neutralize the former completely in the same manner described above. When this has been accomplished, the remaining test solution will need to be measured again, and the difference between the two measurements multiplied by 10 will be the figure representing the total acidity.

For example, suppose that, to begin with, there was in the burette or other receptacle, 20.2 c.c. of the soda solution, and after the titration (as the whole process is called) there is 16.1 c.c. left. Subtracting, it is found that 4.1 c.c. of the solution have been used. Multiplying these figures by 10 (since 10 c.c. of urine were used and all such calculations are upon the basis of 100 cubic centimeters), we have 41 as the total acidity.

Important as this test is to gauge the degree of acidity of the system generally and prevent the blood from becoming too feebly alkaline, it has been so little practised that there is not yet by any means an agreement among different observers as to the normal acidity of the urine; but, judging by my own by no means small experience, it is safe to put it at between 20 and 30. A wide departure from these limits in either direction threatens an impairment of the health if long continued, when it does not indicate an impairment already established.

REPORTS ON INTERESTING CASES.

A CASE OF ANENCEPHALUS.

BY ERNEST B. SANGREE, A.M., M.D.,

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THE accompanying photograph is that of an anencephalus recently given to the museum by Dr. Jos. D. Neil, of this city. I asked Dr. Neil kindly to give me particulars of the case, and received from him the following note: "I was called to see Mrs. G., aet. 35, white, mother of three children. I found her in labor after an indefinite period of gestation. Upon examination I found the os dilated, contents of the uterus high up, but could make out a soft mass. In half an hour I could reach the axilla, left arm, ear, nose and mouth, and then knew that I had to deal with an anencephalus, having

had a nearly similar case fifteen years before. The patient was delivered without special incident of a child normal with exception of the head. There is a history of strained marital relations. The mother is of a nervous temperament. She says that during her pregnancy she very much desired a pig's head, which her husband refused to get. She secured one, anyway, and upon her husband's return he threw it into the alley. She exclaimed she hoped God would make her child headless. Was this fulfilment due to maternal impression, or did God intervene?"



The child is apparently perfectly formed, with exception of the absent brain and skull bones and an epithelial pendulous growth, 1 cm. from the left angle of the mouth, 1 cm. and a half long, and 1 cm. in diameter at the thickest part. There seems to be an entire absence of brain substance; at least, I could not find any, though the search was not as thoroughly performed as I should like, because the specimen had been in alcohol some months, dissection was difficult, and I should have had to destroy the head to make a thorough examination. What there is besides face appears to be little but bone, that immediately behind the eyes being 1 cm. in thickness. The monstrosity was not alive at the time of birth, but the mother had felt movement up to within four days before confinement. The pig's head incident occurred in the third month of gestation.

A Case of Malformations. Dr. W. S. Newcomet exhibited lately before the Philadelphia Pediatric Society an infant that had a meningocele, an epispadias and a pouch-like protrusion of the abdomen between the umbilicus and symphysis pubis, probably the posterior wall of the bladder.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Clinical Studies with Spleen and Thyroid Extract. Bois and Kerr (*Brit. Med. Jour.*, 1898) sum up the result of their investigations as follows: (1) That the most general result of treatment by spleen extract is physical improvement. (2) That its action on the mental state is undoubtedly evident in a fair proportion of cases, especially in adolescents, sometimes direct, at other times owing to improved physical conditions. (3) That it materially assists in rendering thyroid treatment efficacious, the patient, after a course of spleen treatment, being more susceptible to the action of thyroid. (4) That where it fails there may be a defect in the preparation of the extract. They have found that capsules of the liquid extract are best. The desiccated spleen, which is usually employed for tablets, must necessarily lose some of its active properties. (5) It is best given at least an hour before meals. Spleen extract should be worthy of a place in the treatment of mental diseases.

The Pretuberculous Stage of Phthisis, or the Condition which Antedates Tuberculous Development, and Some Aids to its Diagnosis. Loomis (*Med. Record*, Dec., 1898) believes that there is a "pretuberculous" stage, which bears the same relation to fully developed phthisis that transient albuminuria does to nephritis. Certain phenomena preceding tuberculosis, such as progressive loss of weight, coming on without any apparent cause, digestive and circulatory disturbances, etc., occur with sufficient frequency to establish certain diagnostic data. As a result of a study of cases of his own, as well as the perusal of some of the French literature bearing on this subject, the author has arrived at the following conclusions: (1) It is possible in many cases, especially in chloro-anemics, to diagnose phthisis previous to the appearance of physical signs or of tubercle bacilli in

the sputum. (2) Weight, respiratory capacity, and chest measurement have no value in establishing the possibilities of the development of phthisis in themselves, but must be considered in relation to the height of the person, when they furnish three important aids to diagnosis. (3) Corpulence is obtained by dividing the weight expressed in pounds by the height expressed in feet (in a normal man this should be 26; in a woman, 23). (4) Thoracic perimeter is found by taking two measurements of the circumference of the chest — one at the moment of forced expiration, the other at the end of a forced inspiration. The average of these two measurements should never be less than half the height. (5) Vital capacity is the amount of air expressed in cubic inches which can be exhaled after a full inspiration. Normally it should bear the relation to the height of 3 to 1 for a man and 2 to 1 for a woman (*i. e.*, for every inch of height there should be 3 cubic inches of vital capacity). (6) Chloro-anemia and persistent and unexplained disturbances of the digestive system are symptoms of the pretuberculous stage of phthisis. (7) There are two characteristics of the pulse found in the pretuberculous and early stage of phthisis: (*a*) Change of position has practically no influence on its rhythm; (*b*) relative feebleness of arterial pressure. [See editorial on this subject.—B. R.]

Treatment of Diabetes Mellitus. Tyson (*Charlotte Med. Jour.*, Vol. XIII., No. 5) claims that while glycemia is of itself a symptom, it is at the same time a cause of other symptoms, such as furuncle, cataract and neuritis. The complete cure of this symptom he considers as a practical cure of the disease, whatever its origin. To accomplish this, he relies principally on diet, which need not be exclusive in all cases. In fact, glucose is produced also when only proteids are ingested, the albumin splitting up into the carbohydrate radical. The mild cases are relieved by diet, and clinical experience abundantly proves that so long as the urine is free from sugar, or the amount of the latter is less than 2 per cent., the patients are practically well. Experience also attests that a pure proteid diet, kept up for a long time, will lead to starvation. At the same time the author considers it a good practice, when possible, to take the glucose entirely out of the urine by a 24 or 48 hours' restriction to a proteid diet, about once a month. It does no harm to the patient, while it points out his precise condition. In cases which are not amenable to the treatment by diet, hygiene, massage, etc., drugs are often necessary. Of these the author has found arsenic of great service. The best preparation is Fowler's solution. The dose should be very small, not above 5 minims three times a day. Next to arsenic is codein, not because it is second in efficiency, but because it is not so harmless. The initial dose should be $\frac{1}{4}$ gr. after each meal, adding a quarter of a grain a day, first at bedtime, until the desired effect is produced. The effect of this drug is the more satisfactory the less constipation it produces. As most important adjuvants the author considers the alkalies or the alkaline mineral waters. Salicylates are also efficient in mild cases associated with gout. The nitrate of uranium, as well as benzosol, he has found, after repeated trial, to be of no value whatever. In the treatment of threatening diabetic coma, the patient is placed on a diet of

milk and vichy, equal parts. Hypodermoclysis with normal salt solution is of undoubted advantage. Stimulation by ammonia and the use of citrate of potassium in 20 gr. doses every two hours are also useful. A. R.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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Pseudo-Tuberculosis Hominis Streptothricha. (*From the Pathological Laboratory of the Johns Hopkins Hospital.*) Flexner (*Jour. of Experimental Med.*, Vol. III., Nos. 4 and 5) reports a case which presented the symptoms and clinical signs of pulmonary tuberculosis. Absence of sputum prevented a bacteriological diagnosis. At the autopsy the lungs were found to be extensively consolidated, with numerous cavities. The omentum was thickened and studded by nodules resembling tubercles. Microscopically, the areas in the lung were found to consist largely of polynuclear leucocytes, with great fragmentation of their nuclei. There was a marked tendency for these areas to break down with the formation of cavities. The nodules in the omentum consisted of polynuclear leucocytes, epithelioid cells and a very few giant cells. The tissue failed to show tubercle bacilli, but a streptothrix was found, differing somewhat from the so-called *streptothrix pseudo-tuberculosis*. It is acknowledged that the 'bacillus tuberculosis,' under certain conditions, may appear in an irregular branched form, of which, however, little is known. A case somewhat similar to Flexner's was described simultaneously by Buchholz. The Gram-Weigert stain, with the substitution of carbol-fuchsin for gentian-violet, is recommended as the best method of demonstrating the streptothrix. Attempts to cultivate it were a failure.

Unusual Types of Fever in True Pneumonia. Japha, of Berlin (*Deutsches Archiv. fur klin. Medicin.*, Band. 62, Dec., 1898), reviews the various atypical fever curves in undoubted cases of croupous pneumonia. In the type with intermitting or remitting fever, the curve presents periods of subsidence, but the apyrexia is very transient and the physical signs remain unchanged. In the so-called "Intermitting Pneumonia," the periods of

fever are interrupted by intervals of apyrexia in which the signs of consolidation are less pronounced. This form is probably the expression of successive exacerbations of a "Wandering Pneumonia." In the type known as "Recurring Pneumonia," after the crisis and subsidence of the symptoms there occurs a second attack during the period of convalescence. The causes for the irregularities in the course of cases of true pneumonia are not clear. Personal idiosyncrasy, perhaps, plays a part. It is impossible to make an etiological distinction between the different forms. Indeed, they are not sharply distinguished, and all are probably caused by the same micro-organisms. It would be of interest to thoroughly investigate all such cases by many observations, by different men, by culture of the blood and examination of the sputum and material obtained by puncture of the lung. Japha suggests as possible factors in the production of the irregular fever curve, the fact that mixed infection, by malaria, influenza, tuberculosis, or the streptococcus, may take place. The question of the production of immunity in pneumonia is complicated by the occurrence of relapses. However, the fact that such recurrences are often abortive, or, at least, of a mild type, suggests that some degree of immunity was present.

Mitral Stenosis and its Early Diagnosis. Gibbes (*Brit. Med. Jour.*, Jan., 1899) read a paper on this subject before the Chelsea Clinical Society. The question chiefly dealt with was, Are there no reliable signs by which we can diagnose pure mitral stenosis before it has advanced far enough to produce a presystolic *bruit*? He stated that some authorities referred to the advisability of suspecting it in cases where the first sound was short and sharp, others to a first sound of this character followed by a reduplicated second sound. He was unable to accept these signs by themselves, as they occurred so often in other diseases. In mitral stenosis there was a peculiar rhythm heard over a limited area, with or without a presystolic *bruit*; and when this persisted, or became intensified on lying down, in cases where the presystolic *bruit* had not yet developed, he considered it much more diagnostic — it consisted of a prolonged diastole, a short, slapping, abruptly-ending first sound, followed by a reduplicated second sound. He had directed his attention to this for the last two years, and had noted these phenomena in 192 cases while standing, 75 being cases of mitral stenosis in one or other of Sir W. Broadbent's three stages. In 76 they had entirely passed off on lying down, and in the remaining 41 they had persisted or become intensified in lying. Eight of these he had watched developing into ordinary mitral stenosis. He showed cases and tracings illustrating these points.

Gastric Ulcer in an Infant Two Months Old. Dr. Cade reports a rare case of a child, two months old, suffering for four weeks with vomiting and hematemesis; finally, general peritonitis set in, and the child died; autopsy showed that the peritonitis was due to a perforated round ulcer of the stomach.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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An Experimental Study of the Effects of Hydrogen Dioxide upon the Normal Action of Unorganized Ferments. Egbert (*N. Y. Med. Jour.*, Dec., 1898) reports some of his experiments performed with a view to determine the action of hydrogen dioxide upon digestion. Experiments were made with cooked starch, to which saliva was added with and without the addition of the peroxide of hydrogen. It was found that the presence of the latter did not interfere with the diastatic action of the ptyalin. In fact, after the person whose saliva was used in the experiment had rinsed his mouth with a 3 per cent. solution of hydrogen dioxide, the saliva displayed greater diastatic action. It was similarly found that hydrogen dioxide does not interfere with proteid digestion. All these experiments establish the fact that hydrogen dioxide, instead of retarding the normal action of the digestive ferments, may even aid their activity. Further unpublished experiments which the author has made, show that, under certain circumstances at least, diffusion of the products of digestion through animal membrane, and their further elaboration for the nourishment of the tissues, may be facilitated by hydrogen dioxide. The author refers also to some recent clinical experience with hydrogen dioxide in which he cured chronic gastric catarrh by the internal administration of the same remedy.

A Contribution to the Clinical Study of the Gastric Juice. Clarke (*Brit. Med. Jour.*, Dec., 1898) reports two instructive cases illustrating the importance, both for diagnostic and therapeutic purposes, of a chemical examination of the contents of the stomach. One was an obscure case of *tabes dorsalis* characterized by gastric crises. At certain intervals, which became more frequent as the disease advanced, the patient had severe attacks of vomiting, accompanied by a sensation of discomfort in the pit of the stomach, and lasting from one to three days. The vomit was yellowish or green in color and often like coffee grounds. At one time he vomited about 3 pints of dark-red fluid (blood) with some clots. Between the attacks the patient was entirely free from any gastric disturbance, except hyperacidity, with a slight amount of lactic acid. It is interesting to note that during the whole duration of the gastric crises there was a complete absence of HCl and presence of abundant lactic acid. This case well illustrates the

importance of always bearing in mind the possibility of *tabes dorsalis* in obscure affections of the stomach. The second case was one of neurasthenia, presenting an acidity of the gastric juice. The patient, a young man 19 years of age, complained of a weak heart, palpitation, irregularity of pulse and excessive flatulence after food. Examination of the stomach contents, an hour and a half after a test meal, showed a total acidity of 30, chiefly due to acid salts, complete absence of free HCl, small amount of lactic acid and a marked rosy-red color with Fehling's solution. Four to five hours after meals the stomach was found empty. Under the use of dilute HCl, strychnine and pepsin in conjunction with a well-regulated diet, the patient improved markedly and was discharged from the hospital. Three weeks later he returned as bad as ever, the stomach somewhat dilated. Examinations of the gastric contents on three occasions, 1, 2 and 3 hours after a test meal, revealed a total acidity of 16, 23, and 16, respectively. HCl was absent. A small quantity of lactic acid and some butyric acid were present. The treatment consisted of a dry diet of easily-digestible food, a mixture of HCl, dil., m. xv-xx, liq. strych., m. iii, strontii bromidi, gr. x after meals, lavage and baths. Improvement was marked, but the absence of HCl still continued, the acidity varying from 7 to 16. Lactic acid was present on each occasion. Only on February 11th (5 months after second admission) was a slight amount of free HCl found, the acidity in this instance being 37. This case, according to the author, illustrates what is called "nervous dyspepsia," the interesting feature being the complete absence of HCl for such a long period.

A Case of Chronic Constipation Ending Fatally and Associated with Enormous Dilatation of the Sigmoid Flexure. Hichens (*Lancet*, Oct., 1898) reports the case of a young man who, from birth, had been suffering from chronic constipation, his bowels never moving without recourse to artificial means, such as large enemas, drugs, etc. The intervals between the motions were usually from 10 days to 2 weeks. This man died suddenly, having been seized with a severe pain on the day previous to his death. A month before, he suffered from an attack of influenza, but had recovered. The autopsy revealed an enormously distended sigmoid flexure, the summit of which passed behind the ribs and xiphisternum. All the abdominal viscera were entirely concealed. The liver was pushed upward and backward, the lungs were compressed, the heart rotated upward and outward. The total length of the flexure was $22\frac{1}{2}$ inches. Fourteen inches from its upper end a large cicatrix was found, formed by an almost healed ulcer. All the other organs were practically normal. The immediate cause of death could not apparently be determined.

The Non-Medicinal Treatment of Habitual Constipation. Lockwood (*Med. Rec.*, Nov., 1898) considers the best method of treating constipation that which comprises diet, exercise, and general hygiene. The use of drugs is prejudicial, as it inflicts serious damage to the gastro-intestinal tract by the lessening of digestive and motor powers of the stomach and the irritation of the intestinal mucous membrane. The contraindications to

the use of saline and vegetable cathartics are: (1) All the conditions characterized by diminished secretory power; (2) all conditions of impaired muscular power of the stomach and intestine; (3) all conditions of inflammation of the stomach or intestines; and (4) in children, owing to the proneness in them to inflammation of the intestinal mucosa. Enemas facilitate the absorption of ptomaines by the liquefaction of the feces. The articles of diet most useful are coarse vegetables, such as spinach, turnips, and sprouts (these are best taken in the form of purée); coarse breads one day old, and cereals. Sugars are also useful, but should be taken in the form of honey or lactose. Buttermilk or Kumyss, 3 glasses a day; fats in the form of butter, one-eighth to one-half pound daily, or cod-liver oil; and organic acids are useful as peristaltic exciters. Another excellent remedy is made up of 2 parts of prunes and one of figs. Raw fruit is not desirable. Huckleberries and cranberries should be especially avoided. In general, the diet should be dry. Exercise, massage, abdominal gymnastics, electricity, abdominal belt and hydrotherapy are all very important adjuvants to the treatment. Massage is contraindicated in all inflammatory and spastic conditions. Sedative remedies are indicated in intestinal spasm, a quite frequent condition, caused primarily by hyperacidity. The author has also found Kussmaul's oil irrigations very beneficial.

NEUROLOGY.

UNDER THE CHARGE OF

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Zur Lehre der spinalen neuritischen Muskelatrophie, etc. (Contribution to the Study of Spinal, Neuritic, Muscular Atrophy, etc.). E. Siemerling (*Archiv. für Psychiatrie*, Vol. XXXI., Nos. 1 and 2) refers to the fact that cases of progressive neural muscular atrophy with necropsy are very rare. This form of disease is now quite generally recognized. Hoffmann, who has done so much to make it known, regards it as holding an intermediate place between spinal myopathy and muscular dystrophy. In the case which Siemerling reports, atrophy began in the legs of a patient when he was five years of age, and extended to the thighs. Deformity of the feet was also noticed at this time. Two years later, wasting of the hands was observed. When the boy was thirteen years old, walking became impossible, and, when he was twenty, reflex rigidity of the pupils, nasal speech, intense atrophy of the trunk and of all the extremities, complete flaccid paralysis of the lower limbs with contracture at the right knee, incomplete paralysis of the upper limbs, fibrillary tremors in the intercostal muscles, lost knee-jerks, diminution or abolition of the electrical

reactions, imperfect perception of pain, and mental depression, were noted. The microscope showed degeneration of the posterior and lateral columns, most marked in the lower thoracic and upper lumbar regions, atrophy of the cells of the anterior horns, atrophy of Clarke's columns and of the anterior roots, and degeneration of the spinal ganglia, peripheral nerves and muscles. In the few necropsies which have been obtained in cases of progressive neural muscular atrophy, degeneration of the nerves, muscles and posterior columns has been found, and in some cases the cells of the anterior horns of the spinal cord have been involved. The marked alteration of the lateral columns and of the spinal ganglia in Siemerling's case were unusual findings. No proof has been offered that the disease is due to toxic causes. Siemerling believes that the degenerative process begins in the portions of the posterior roots within the spinal cord.

Médication Thyroïdienne et Arsenic (Thyroid Medication and Arsenic). Bédart and Mabilie (*Comptes rendus de la Soc. de Biologie*, 1898, p. 556) discuss this subject. Mabilie, in treating a patient with goitre, gave arsenic in addition to the thyroid medication, in order to avoid the bad effects of the latter. The excitement, palpitation of the heart and tremor disappeared quite rapidly under the influence of arsenic, but reappeared when the arsenic was discontinued and the thyroid treatment employed alone. Bédart and Mabilie report the results of their experiments on dogs and rabbits to determine the effects of the combined treatment. The fresh thyroid gland of the sheep and Fowler's solution were used. When the gland was administered alone, the cardiac pulsations increased very rapidly, reaching as high as 190; the animals presented manifestations of irritability after six or seven days and tremor developed. When arsenic and the thyroid gland were given together, the pulsations after a time decreased to 100 or even 90, became more normal in force and regularity, and phenomena of irritability and tremor were not present. Considerable decrease in body weight occurred in the dogs when thyroid alone was given, but the decrease was much less when arsenic was added.

The Stigmata of Nervous Syphilis. Rothwell (*Jour. Amer. Med. Assoc.*, Nov. 19, 1898) considers some of the most common evidences of this condition. Localizing symptoms, similar to those produced by non-specific lesions, occur and have the same anatomical causes, the associated symptoms determining the real nature of the disease. He regards the meninges and the blood-vessels of the convexity of the hemispheres and the base of the brain, especially about the cranial nerves, as the most vulnerable portions of the neuraxis. Lesions may be focal or diffuse, and the symptoms are both multiple and multiform. Exceptions are found, however, as, for instance, in the isolated loss of the iritic reflex to light. The symptoms are transitory in character when directly due to a specific process, but the results of secondary lesions, that is, necroses or degenerations, are usually permanent. In other words, a uniformly progressive course in a disease is a probable indication of its non-specific character. Among the stigmata, headache possibly holds first place. It is found in three-fourths of all cases of cerebral syphilis. It is intense and usually described as deep-seated and localized in a definite

region. Exacerbations are common and are followed by remissions or intermissions. It is almost always worse at night, and is often accompanied by evidences of mental change. Insomnia is one of the early manifestations of the syphilitic disease, but may cease on the supervention of motor phenomena. Somnolency is also a prodrome of cerebral syphilis. Middle life seems to be the period in which these stigmata of nervous syphilis are most likely to become manifest.

Malarial Peripheral Neuritis. Highet (*Jour. Tropical Med.*, Nov., 1898) presents the results of a study of ten cases of malarial neuritis. Intermittent fever, persisting for a long time, or remittent fever with frequent exacerbations, is followed after some months by attacks of pain in the legs and knees. These pains are worse at night, and are sometimes associated with cramp of the muscles. Later the knees feel weak and give way, the limbs become painful in the daytime as well as at night, and the pain extends to the thighs, the back and the arms. Fever persists, the pain interferes with sleep, the weakness may become paralysis, cutaneous sensibility is blunted, and paresthesiæ are marked. The loss of muscular power may assume a remittent character. Hemeralopia may occur. The spleen and liver are enlarged. Deep pressure over the muscles causes pain. The tissues become flabby and may atrophy. Effusion into the joints sometimes occurs. The condition of the heart is variable; at one time it is quiet, and again it is rapid, with arrhythmia. Angina and tachycardia have been observed. Anemia, cardiac dilatation and hemic murmurs are noted in some cases. Occasionally there is some edema of the feet. Highet considers malarial peripheral neuritis to be a toxic affection of the nerves, the toxin being the product of the malarial germ. A single attack of fever rarely causes well-marked neuritis; the cumulative action of the poison on the nerves being required to bring about the pathological changes which give rise to the symptoms. The period of incubation extends on an average over eight months. Removal of the cause and efficient hygienic and medicinal treatment usually give good recovery. The diagnosis of the affection must, in most cases, be made from beri-beri. The principal points of difference are that in malarial peripheral neuritis we have marked anemia, mild or absent heart symptoms, enlarged spleen, neuritis preceded by fever and often associated with it, the long incubation, the remittent character, the presence of plasmodium, the shuffling gait when loss of power is marked, and the readiness of cure. In beri-beri affection of the heart is a regular feature, local edema and serous effusions occur, the onset is rapid and usually attended with fever, there is no plasmodium, the gait is equine and typical, and sudden death is common. As the diseases occur in the same regions, one must think of mixed infection.

Internal Use of Ichthyol in Acne. Dr. Tessner administers 5 to 8 grs. of ichthyol three times daily in pills or capsules, with the result that it regulates the bowels, improves digestion, and has a curative effect on the skin affection.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Experiences in Primary Renal Tuberculosis. J. Israel (*D. Med. Wochenschrift*, No. 28, 1898) finds that primary tuberculosis of the kidneys is more frequent than secondary. Of the 21 cases operated on for renal tuberculosis, 16 were undoubtedly primary. It is more frequent in women, in whom it was found in $66\frac{2}{3}$ per cent. of all operated cases. Most of the cases are unilateral. In only two cases (12.5 per cent.) was the affection bilateral. The chronic cases appear in three anatomic and clinical forms. Most frequent is the caseo-cavernous form (81 per cent.). In this form there is usually also involvement of the capsule, which appears in 4 forms: as lipomatous sclerotic thickening; as perinephritic abscess; the fungous form, and, finally, in the form of isolated large nodules in the capsule. The second form of renal tuberculosis is the very rare tuberculous ulceration characterized by profuse, long-continued hematuria. The third form is the one in which the entire organ is studded with nodules, arranged in the form of rays. In this case there is often involvement of the second kidney or the lung. If left to take its own course, the tubercular disease of the kidney leads to ureteritis and periureteritis. Then the bladder becomes involved, the affection being limited for a long time to the half corresponding to the diseased kidney. The author has observed secondary tuberculosis of the bladder in 43.75 per cent. of the operated cases. The coexistence of tuberculosis of the lungs was found in half of the cases. Of great diagnostic significance is the initial hematuria, which was observed in 16 cases of primary renal tuberculosis. In 4 cases it was the only initial symptom present. The kidney is always enlarged to about twice the size of the normal. Palpation is accompanied by very little pain. Bacilli were found only when the bladder was also affected. Casts are seldom found. The amount of albumin in the urine is slight, not above 0.5 per m. Red blood corpuscles are always present. Of the general symptoms, fever in primary tuberculosis was observed in 25 per cent.; when the bladder was involved, in 80 per cent. Loss of weight and decrease of the number of the red blood corpuscles was observed in all cases; in some the reduction of hemoglobin amounted to 50 per cent. Diarrhea was often present. It was not due to intestinal tuberculosis, for it rapidly subsided after nephrectomy.

Movable Kidney with Special Reference to its Influence on the Nervous System. Suckling (*Edinburgh Med. Jour.*, 1898) tells how to diagnosticate a movable kidney. He says it can only be made by

palpation of the abdomen. The abdomen should be uncovered and the patient lying down. To feel the right kidney, the right hand should be placed on the abdomen, the thumb being on the last rib at the back and fingers in front below the costal margin. The kidney may be felt with slight pressure of the fingers to be down, but, if not, when the patient draws a deep breath, the kidney will slip into the fingers and can be slipped back easily. A common mistake is to palpate the abdomen with the flat of the hand; this simply pushes the kidney in front of the hand. The best way is to get the kidney in between the thumb and fingers, and not to press too heavily. It is necessary, before concluding that the kidney is not movable, to examine the patient sitting or standing. In these two positions the patient should lean forward and try to relax the muscles. In examining the left kidney, the left arm should be placed around the body, the physician standing on the right side of the patient, the fingers being placed under the last rib; the right hand should be placed under the left costal margin. On drawing the breath or on sitting or standing, if the kidney be movable, it will be felt between the fingers and can be made to slide up in a most characteristic way. The left kidney rarely falls to the same degree as the right. The right kidney frequently falls into the iliac fossa and even into the pelvis, but the author has never seen a case where the left fell below the umbilicus. It is remarkable that the left kidney feels much smaller than the right.

On Obscure Hemorrhage from a Single Kidney and its Cure by Nephrotomy. Rovsing (*Brit. Med. Jour.*, Nov., 1898) doubts the existence of so-called "hematuria from a healthy kidney." He claims that the only cases in which the cause could be positively determined are those subjected to an exploratory operation, and of the 12 reported cases of this kind, only 2 are in any way convincing. In all others various pathologic conditions were found, which would account for the bleeding. In none of all these cases was a bacteriologic examination made, thus excluding the possibility of determining whether the cause of bleeding was or was not due to infection. It is now a recognized fact that urinary infection may occur without supuration. Finally, the supposed "normal" kidneys were possibly not the ones responsible for the hematuria, the seat being either in the pelvis or ureter. As to the cause of the bleeding, the author ascribes it either to torsion of the pedicle with its vessels, causing a venous stasis in the kidney and rupture of small veins, or retention (intermittent acute hydronephrosis). It is also probable that a sudden invasion of the kidney by a great number of microbes may give rise to a passing hematuria without other effects. The author also points out as a cause of hematuria the traumatism produced on the kidneys by tight lacing, thus explaining some apparently mysterious cases. In conclusion, the author emphatically objects to the nosology and treatment of Klemperer, claiming as the only means of treatment and diagnosis an exploratory incision.

On Compensatory Hypertrophy of the Suprarenal Body. Simmonds (*Virchow's Archiv.*, CLIII., S. 138) found, on the autopsy of a man who died from carcinoma of the face, an atrophied left suprarenal, the right

being correspondingly hypertrophied. The atrophy was acquired as a result of tuberculosis, affecting the cervical glands and the left suprarenal only. This led the author to experiment on the lower animals, and he found that extirpation of one suprarenal was invariably followed by a vicarious hypertrophy of the other, thus proving that the suprarenal bodies belong to the paired organs, one of which assumes vicarious hypertrophy in case of atrophy of the other.

The Diagnosis of the Condition of Each Kidney by Inoculation of the Separated Sediments into Guinea-Pigs in Suspected Renal Tuberculosis. Reynolds (*Bul. of Johns Hopkins Hosp.*, Nov., 1898) emphasizes the importance of an early diagnosis of primary renal tuberculosis when it is unilateral. A nephrectomy performed then would save the life of the patient. The diagnosis, however, is exceedingly difficult. The early symptoms of the disease will vary greatly, both in character and in intensity in different cases, and even in the same case at various times. Typically the symptoms are pain of a bearing-down character and usually increased by standing, frequent urination which is urgent, and sometimes hematuria. These conditions, however, are symptomatic also of simple pyelitis, renal calculus and new growth in the pelvis of the kidney. A microscopic examination for tubercle bacilli in the urine may also prove misleading, since they were found wanting by experts when renal tuberculosis actually existed. The tubercle bacilli, if found, should be carefully differentiated from the smegma bacillus before a positive conclusion is reached. The only way of making a positive diagnosis is the injection of a fresh sediment into the peritoneal cavity of a guinea-pig. For the purpose of determining whether one kidney is affected, the urine should be collected separately from each ureter. In the case reported by the author, the urine from the right kidney, when injected into a guinea-pig, produced tuberculosis in the animal. The urine from the left kidney did not. When the right kidney was removed, it was found tuberculous, although it was apparently normal in external appearance, showing that the disease was in its incipency. The woman recovered.

DERMATOLOGY.

UNDER THE CHARGE OF

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On the Treatment of Lupus Vulgaris by Local Application of Creosote. Protopopoff (*Medicinskoe Obosrenie*, Nov., 1898), speaking of the lack of means at our command for effectually curing this obstinate affection, points out creosote as a remedial agent, which was first employed with

good effect by Serenin in 1895. Basing his conclusions on the observations of three cases of his own, as well as those made by others, the author claims that local application of creosote, preceded by scarification, will bring about a marked improvement, leaving thin, smooth and even scars. This is of considerable importance whenever the cosmetic effect is to be taken into consideration. The disadvantages of this method are the objectionable odor of creosote and the possibility of poisoning. The author recommends the method whenever the disease is not far advanced.

A. R.

Lupus Erythematosus: Its Amenability to Treatment. White (*Jour. of Cut. and Gen.-Urin. Diseases*, Vol. XVI., No. 10, 1898) holds a very hopeless view on the curability of this obstinate affection, claiming that it is in inverse ratio to the length of the list of means recommended for its cure. The author disputes the ground taken by the dermatologists, who consider lupus as tuberculosis of the skin, basing their conclusions on the action of "tuberculin" on lupus erythematosus. "Given a disease of unknown nature, a remedy of untested properties, productive of an unstudied action upon forms of cutaneous tuberculosis, a similar action, it may be, upon the former, *ergo* lupus erythematosus is a form of tuberculosis. Such methods of experimentation and inference under the name of science are hardly less puerile than the same conclusion would be from the fact that tuberculin and tuberculosis both begin with T." As an analogy the author mentions the generally accepted therapeutic test of syphilis by the action of iodid of potash, and here he says that he no longer believes in the trustworthiness of this test, for his experience of the past two or three years has taught him that this drug will clear up areas of psoriasis, which often simulates syphilitic dermatoses. In the treatment of lupus the author employs both internal and external medication. Of the latter he uses only the mild remedies, such as black wash, zinc oxide and sulphur wash, calamine and Boeck's washes, white precipitate ointment, salicylated soap plaster (10 to 20 per cent.), and lactic acid as the subsequent and stimulating remedies. Drugs which have proved especially serviceable are: iod-glycerin (iodin, pot.iod, aa 3i , glycerin 3iv) and emplastr. mercuriale.

A. R.

Furunculosis: Its Etiology and Treatment. Stoner (*Med. News*, Jan., 1899) does not believe that boils depend upon an internal dyscrasia. They are a purely local affection, due to the invasion of the staphylococcus pyogenes aureus, and sometimes albus or citreus. Of course, disordered metabolism may increase the predisposition by the formation of a locus minoris resistentiae. There is no specific, and the treatment resolves itself into the liberal use of antiseptics, the best of which is a strong solution of bichlorid of mercury, 1 to 500. It should be mopped upon the unbroken skin for some distance about the abscess, if such has already formed. This antiseptic treatment prevents the further infection of the neighboring hair follicles. The application should be made twice a day; the abscess cavity irrigated with a weak bichlorid solution. The poultice is only mentioned to be condemned, as the heat and moisture it produces enhance the vitality and activity of the pyogenic germs, and a greater amount of necrotic tissue

is produced, thus more than counterbalancing the temporary alleviation of the pain. In summarizing, the author repeats that the so-called condition of furunculosis is a misnomer; that it is not a constitutional disease to be treated by internal remedies, but that it is simply the result of local points of infection originating from a parent source; that its treatment should consist in limiting the pus-producing agency within the bounds of its starting-point, and, when this is not practicable, to destroy the pus-cocci by a strong solution of bichlorid of mercury before they are able to start new points of infection; that the so-called abortive treatment has little to commend it except in the very incipency, and that a strong solution of corrosive sublimate is the agent *par excellence* to be depended upon for this purpose. A. R.

Some New Remedies in Dermatology, Derivations of Pyrogallol, Chrysarobin and Resorcin. Kromayer and Vieth (*Monatsh. f. prakt. Dermat.*, Vol. XXVII., No. 1) have tried the following new chemicals in skin diseases: Lenigallol (pyrogalloltriacetat), eugallol (pyrogallolmonoacetat), saligallol (disalicylat), lenirobin (chrysarobintetraacetat) and eurobin (chrysarobintriacetat). The results obtained were as follows: Lenigallol, insoluble in water, has no effect on sound skin, acts only on diseased areas, and never produces poisoning. It is used in weak dilution (lenigallol 0.5-5.0; ung. zinci oxidi 100.0). It acts rapidly and effectually in acute and subacute eczema, especially in children. Eugallol is of a syrupy consistency, and forms, when diluted with acetone and painted over the skin, a firm and elastic film. It acts very energetically on psoriasis, but it must be used with caution, as it may produce inflammation of the skin. Saligallol, dissolved in 2 parts of acetone or 15 parts of chloroform, forms a very nice protective, and can serve as a vehicle for eugallol, eurobin and other medications. Lenirobin and eurobin are much less liable to produce conjunctivitis than chrysarobin, although just as active. A. R.

What are We to Understand by Eczema? Morris (*Jour. Cut. and Gen.-Urin. Dis.*, Vol. XVI., No. 193) says that we know a good deal about eczema, but we are not yet agreed as to what eczema is. He believes, together with Unna, that the disease is due to a parasite, first cultivated and described by Unna under the name of "morococci," because they are often seen clustered together in little masses resembling mulberries. The contagious nature of this affection seems to be established by several reported cases. As in any other infectious disease, predisposing conditions are necessary for its production. There may be various disturbances of the digestive or nervous system. In conclusion, the author answers the question by the following statement: "It is a disease, the most clinical character of which is the infinite variety of lesions by which it displays itself, originating in the action of parasites on the skin, the resistance of which has been enfeebled by pre-existing disease or structural abnormality, or by disordered innervation, sometimes made more intractable by gout and other constitutional states, but having no direct relation to the general health."

A Case of Dermatitis Exfoliation Neonatorum. Prissmann (*St. Petersb. Medicin. Wochensh.*, Dec., 1898) reports a sporadic case of this rare affection in a weak, syphilitic infant, 10 days old. The dermatitis appeared at first as intertrigo, the skin becoming red and dry. Here and there sudamina formed, soon followed by exfoliation of the skin. In the course of a week the skin of the entire body, except the hands, became affected. The body looked intensely red, the skin smooth, shiny and dry. There was no fever, although the child appeared to suffer greatly. No pronounced symptoms of syphilis could be discovered, the syphilitic taint being presumed on account of the syphilitic mother. Sublimate baths were given. These were followed by a considerable aggravation of the symptoms. The treatment was then changed to bran baths and dusting of a powder composed of dermatol, oxide of zinc and talc, followed by a salve of boric acid. Improvement set in, and the child completely recovered in 4 weeks. It subsequently died of gastro-intestinal catarrh. A. R.

PEDIATRICS.

UNDER THE CHARGE OF

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The Bacteria of Pneumonia in Children. H. Dürk (*Deutsch. Archiv. für klin. Medicin.*, Band 58, Heft 4 and 5) describes the various forms of bacteria found in forty-one autopsies on children suffering from pneumonia. The *Diplococcus pneumoniae* was most frequently found. There is no special effect, however, produced upon the pneumonic exudate, as a result of this admixture; nor does this enable us to differentiate histologically between lobular or pseudo-lobular varieties. It is only admissible to use the term "broncho-pneumonia" when it is certain that the inflammation has progressed from the terminal bronchi to the peri-bronchial tissues. In thirteen children dying from other causes and with healthy lungs, he found constantly various bacteria, the *Diplococcus pneumoniae* being again most frequent; nor were they due to post-mortem infection. Studies of the lungs in recently-killed animals exhibit the same bacteria; this practically proves that bacteria capable of producing pneumonia are to be found in the lungs of healthy people and only produce the disease in organs which are especially susceptible or traumatically rendered less resisting. He also introduced pure cultures of these bacteria which failed to produce the disease.

The Urine of Healthy Infants and Children. Churchill (*Archiv. of Pediat.*, 1898) makes a study of the urine in 70 normal infants and children, ranging in age from 1 day to 12 years; 48 girls and 22 boys, the results of which are classified as to age and average. The analysis includes 146 specimens. The children were inmates of an orphan asylum and under constant observation of trained nurses. Churchill's results show differences in the amount as recorded by other observers, the average being much less. The specific gravity average is higher and a higher percentage of urea. The amount of urea per kilogram of body weight, while slightly higher than the ratio given for adults, is lower than that given by other observers. Eight cases give over 3 per cent. urea, the highest being 3.7 per cent. Chlorides were found constant at about 11 per cent., up to seven years, after which about 9 per cent. Phosphates were found to be from 8 to 11 per cent. between 3 and 5 years; 5 to 7 per cent. between 6 and 12 years; the adult range being about 8 per cent. One boy showed 16 per cent., the digestion being absolutely normal. The percentage of sulphates was from 1 to 1.2 per cent., the average in adults being .8 of 1 per cent. Neither albumen nor sugar was found in any specimen. The sediment showed nothing in particular; the reaction being all of various grades of acidity. The color in most cases was pale, in the rest, normal. A conclusion drawn from this study is that children with a renal, rheumatic or lithemic heredity, should have the amounts of their urine carefully ascertained, along with the quality of their food and drink; and to institute measures to insure the elimination of a more dilute and less irritating urine.

THERAPEUTICS.

UNDER THE CHARGE OF

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Camphorated Tincture of Opium in Cuban Malaria, Mixed Malaria and Typhoid-fever Infection. Thomson (*Med. News*, Vol. XXIII., No. 25) presented the following observations to the County Medical Society of New York: When he took charge of the wards of the Roosevelt Hospital on Sept. 1st, it contained 61 cases of fever contracted at Santiago. The majority had been in the hospital since the 17th of August, and had been sick from 20 to 40 days. All had received large doses of quinin (30 to 60 grs. daily), Warburg's tincture $\frac{1}{2}$ ounce to the dose, and arsenic until it disturbed the digestive system. Thirty-nine cases followed; of these two groups, 63 had fever ranging from 103° to 107°, and 40 per cent. of this

number had chills, with the usual succession of symptoms, but with true intermissions only 10 per cent. The remaining 60 per cent. were irregular and had fever, but no chills. *Plasmodium malaria* was found in 90 per cent.; commonest forms were crescents; many active, mobile, extra cellular bodies, some free pigment and one flagellate body were found. (He thought more could be found if he had had the time.) The clinical picture was one of emaciation and anemia, which appeared quite independent of enlargement of the liver or spleen; the former was enlarged in only 5 per cent. of the cases, while the latter was so in 50 per cent. The condition of mind was taciturn, apathetic, and indifferent. On this condition the treatment had most effect, the majority of them became bright, with a rapid general improvement; those who were delirious regained mental tone rapidly. Mode of administration was as follows: Quinin and powdered ginger aa. xv gr. twice daily, with $\frac{3}{4}$ ss of paregoric and a dose of paregoric later. In 47 per cent. the fever fell within 24 hours, and 21 per cent. within 48 hours. In three cases it failed, but was probably due to complications, while six were mixed typhoids. The Greek and Roman physicians used opium for malaria, and this drug was generally used, up to the time when Peruvian bark was discovered, and, although it fell out of general use at that time, some authors still advocated it.

The Employment of Sodium Sulphate as a Hemostatic. Bouveyron (*Lyon Mèdical*, Vol. LXXXIX., No. 45), in contradiction to an article published recently claiming that sodium sulphate was a new remedy for controlling hemorrhage, cites articles by Sydenham in which he recommends this drug as a preventive of spontaneous hemorrhage in fevers; also a publication in Geneva, 1696, in which it is recommended for epistaxis, etc. Fordyce, of England, in his book, 1784, mentions it in the treatment of hemophilia, as does Löwe, of Germany; Smith, of Pennsylvania, and Otto, of New York, have mentioned its use in their writings; Hay and Coates, of America, Johnson, Hunt and Miller, of England, and several German and French writers have written at length upon it. It may be administered by three methods: (1) In one large dose; (2) in small divided doses; (3) in one large dose followed by smaller doses. In these methods it will be found to be valuable in hemoptysis, epistaxis, metrorrhagia, etc. Independent of its purgative action, it may be given in small doses, or subcutaneously, the latter after severe hemorrhage, as sometimes happens in labor.

The Therapeutic Use of Heroin, a Substitute for Morphine. Strube, of Berlin (*Berl. klin. Woch.*, Nov. 7, 1898), has experimented with this new drug and found it a valuable substitute for morphine and especially valuable in such cases as phthisis where coughing and pain predominate, in the dyspnea of cardiac and renal asthma, and in pain generally. The drug is a substitution product of morphine and acetic acid, is white in color, with a slightly bitter taste, only sparingly soluble in water; the dose is 0.005 grm. Heroin oxalate, however, is soluble, and this may be administered hypodermatically; its action is about the same as that of the drug itself. Dose, 0.005 grm. ($\frac{1}{16}$ gr.); never more than 0.01 grm. ($\frac{1}{8}$ gr.) should be given at

once, and not over 0.025 grm. ($\frac{3}{8}$ gr.) per day. Its action lasts from 2 to 4 hours.

Ichthyol Suppositories in Cases of Chronic Prostatitis. Freundenburg, of Berlin (*Gazette Medicalé Belge*, Vol. II., No. 10), recommends suppositories of ichthyol, .3 grm. to .75 grm., in cocoa butter, to relieve painful defecation, unpleasant sensations in the perineum, dysuria, etc., and for the diminution in the swelling of the prostate gland itself. The relief usually follows quickly, and rarely requires a larger quantity than .6 grm. to each suppository.

Sulphonal Poisoning. Gulland (*Brit. Med. Jour.*, Dec., 1898) read a paper before the Edinburgh Medico-Chirurgical Society in which he narrated a fatal case where the patient had, without the knowledge of his medical adviser, taken 30 grains of sulphonal every night for about six weeks. About a week before his death he developed ataxia of the extremities, lassitude and drowsiness, and then hemato-porphyrinuria, and died somewhat suddenly. The post-mortem examination showed no very marked gross lesions beyond fatty degeneration of the heart and stasis in all the organs, but when these were examined microscopically, the principal change was found to be necrosis of the secreting epithelium of the kidney, and certain degenerations in the liver and suprarenal capsules. The pathology of both acute and chronic poisoning was described, and special stress was laid on the kidney changes which were common to both chronic and acute forms, and which the author believed to have at least as much to do with the fatal issue as the action of the drug as a blood poison. In regard to the treatment of acute poisoning, it was pointed out that it was essential to remove as much as possible of the insoluble drug from the alimentary tract, and also to keep up free diuresis, whilst in the chronic form the free use of alkalies was insisted on. The paper terminated with a discussion of the cases in which sulphonal should not be given, these being especially cases where there was constipation, great prostration, or kidney disease, and with a plea for the more careful and discriminating use of the drug.

Washing Out the Stomach after Anesthesia. Dr. Gunby employs gastric lavage to prevent the nausea and vomiting following the use of general anesthesia. He resorted to it 50 times, and in all the patients there was an almost entire absence of nausea. They were more cheerful, and able to take and assimilate nourishment very soon after the operation. In flushing out the stomach he uses an ordinary stomach tube of a large size. From 1 to 2 quarts of warm water are used, and the washing is continued until the water returns free from bile or mucus. The introduction of the tube is best accomplished before the patient recovers consciousness. In order to prevent the closing of the tube by the patient's teeth, a mouth-gag or a large cork is used.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Action of Cobra Poison on the Blood: A Contribution to the Study of Passive Immunity. Stephens and Myers (*Jour. Path. and Bact.*, No. 3, 1898). The paper is divided into two parts. Part I. deals with the hemolytic action of cobra poison and the influence upon this hemolytic action of antivenomous serum. The following summary is given: "1. Cobra poison is strongly hemolytic *in vitro*. 2. This action is neutralized by antivenomous serum, and the action of the latter is specific. 3. For certain doses (.1 mgrm.) the measure of this neutralization *in vitro* is a measure of the neutralization *in corpore* for guinea-pigs. 4. The neutralization is chemical, and not cellular or vital." Part II. of the paper deals with "The Influence of Cobra Poison on the Clotting of Blood and the Action of Antivenomous Serum upon this Phenomenon *in Vitro*." The following conclusions are reached: "1. Cobra poison delays or inhibits clotting of blood *in vitro*. 2. This inhibitory action upon clotting of cobra poison is neutralized by antivenomous serum *in vitro*. 3. This action of the antivenomous serum *in vitro* is specific. 4. The antivenomous serum itself, when added to blood, delays clotting. 5. For certain doses (.1 mgrm.), the measure of the neutralization *in vitro*, using clotting as the test reaction, is also the measure of the neutralization *in corpore* for guinea-pigs. 6. The neutralization of the toxin by its antitoxin *in vitro* is certainly not vital or cellular, but must be chemical." The article is followed by a bibliography.

The Condition of the Salivary Glands and Pancreas in Chronic Tuberculosis. Harris (*Jour. Path. and Bact.*, No. 3, 1898) found certain changes in the parotid and submaxillary glands, and, though to a less marked degree, in the pancreas. There is a marked increase in the fibrous tissue in connection with the blood-vessels. This fibrosis follows, to a certain extent, the main ducts, and is also present in the inter-alveolar tissue. The changes begin as accumulations of small nucleated cells in connection with the arteries leading to the lobules. This leads the observer to infer that the change is inflammatory. The pressure of the newly-developed fibrous tissue is believed to induce secondary degeneration and destruction of the alveolar cells.

Experiments to Determine Whether Sewer Air Will Raise the Toxicity of Lowly Virulent Diphtheria Bacilli. Shattock (*Jour. of Path. and Bact.*, No. 3, 1898). Diphtheria bacilli of a low degree of virulence were cultivated in an artificial sewer air. Attempts were made to aspirate air from the sewer, but, by reason of the satisfactory ventilation, such air was not believed to possess a sufficient degree of foulness. In order to be sure that the air was sufficiently impregnated with the sewer effluvia, sewage was confined in iron tanks and an ordinary Wolff bottle was charged with diluted fecal matter. The contaminated air retarded the growth of the bacilli. The observer comes to the following conclusions: "The result of these experiments shows that lowly virulent diphtheria bacilli, when cultivated in broth over which fecal air is passed, do not acquire toxic properties, even though the treatment be prolonged for a period of two months."

The Changes Occurring in the Blood of Dogs after Removal of the Thyroid. Levy (*Jour. Path. and Bact.*, No. 3, 1898) reached conclusions that may be briefly summarized as follows: The anemia which follows thyroidectomy is not constant, though usual. It may appear quickly, within two or three days, or its appearance may be greatly delayed. It is not intense. Reduction of the red corpuscles is about 25 per cent., of the hemoglobin 30 per cent. There is no relation between the intensity of the symptoms and the degree of anemia. There is moderate leucocytosis. The specific gravity of the blood always diminishes. The extent of its diminution is inconstant. The fibrin increases. The author concludes that the blood changes in thyroidectomized animals are inconstant in quantity, time of onset and duration.

Note on the Presence of Iron in the Liver and Spleen in Two Cases of Malaria. Dutton (*Jour. Path. and Bact.*, No. 3, 1898) notes the work of Macallum, Boyce and Herdmann, and gives as his method of procedure the following: "Every care was taken to prevent contamination with iron by the use of pure chemicals, glass needles, distilled water, and chemically clean watch glasses. Sections taken from absolute alcohol were transferred to distilled water for a moment to remove the alcohol; they were then placed in one or other of the following reagents: 1. Potassium ferrocyanide, aqueous solution, 1.5 per cent., for about ten minutes; and then into hydrochloric acid, aqueous solution, 0.5 per cent., for five minutes. Almost immediately on treatment with the acid the Prussian blue color was obvious to the naked eye. 2. Sections were transferred to a watch glass, full of distilled water, in which were placed a few crystals of pure hematoxylin, for from ten to fifteen minutes. 3. Nitric acid, 3 per cent., in absolute alcohol. The sections, after treatment with this reagent for about half an hour, were washed in distilled water, and then placed in one or other of the two former solutions. After treatment, the sections were washed in distilled water, dehydrated in absolute alcohol, cleared in cedar oil, and mounted in Canada balsam." The author gives a fairly elaborate historical account and supplements his article by a plate showing the histo-chemic reactions of iron in the liver.

The Effect of Marchi's Fluid on Nervous Tissue that Has Undergone Post-mortem Change. Batten (*Jour. Path. and Bact.*, No. 3, 1898) states that his research was made with the object of determining "to what extent nervous tissue which had undergone post-mortem change, and had been treated by Marchi's fluid, might give rise to appearances likely to be mistaken for degenerative changes." His conclusions were as follows: "I think that the tests above applied, and the results obtained therefrom, warrant the conclusion that Marchi's fluid will demonstrate degeneration in nervous tissue, even when this cannot be obtained for several hours after death, and may safely be used for that purpose so long as the following points are borne in mind: 1. That there is normally a considerable amount of interstitial fat at the exit of the anterior roots and the entrance of the posterior roots into the cord. 2. That a few scattered black dots almost always exist, not only in sections of the cord, but also of the nerves, and that such are no evidence of degenerative change."

A Case of Deciduoma Malignum. Kelly and Teacher (*Jour. Path. and Bact.*, No. 3, 1898) give a resumé of the clinical history, followed by a report of the post-mortem, which may be abstracted as follows: Lungs contain evident secondary growths. The heart condition indicates fatty degeneration. The aorta is slightly atheromatous. Posterior wall of the uterus is the seat of a large vascular tumor about the size of an orange. The lymphatic glands around the rectum are enlarged, and its neighborhood is involved by secondary growths. There are tumor masses in the vaginal wall. The right Fallopian tube contains a small round nodule. There are tumor masses on either side of the vagina and cervix. The veins passing into the tumor are found distended with tumor tissue. We regret that space will not permit the description of the histology. The following remarks concluded the author's paper: "In conclusion, then, it appears that this tumor, like a number of others which have been described by German and American authors, has originated from the epithelium covering the chorionic villi. Further, it is the opinion of the authors of this report that it has been clearly made out that both layers of the epithelium of the villi are represented in the tumor. On account of the alterations due to pressure in infiltrating the normal tissues, and the changes of a degenerative and necrotic nature which overtake the cell processes, this point cannot be made out in many parts of the growth; but in several parts, which had the characters of actively growing and well-preserved tissues, they believe that they have clearly recognized the two kinds of cells, growing in the same close and intimate relationship to one another as in the normal placenta; thus supporting the opinions so ably expressed by Marchand. In view of its epithelial origin, the manner in which it infiltrates the adjacent structures, and the secondary involvement of the lymphatic glands connected with the primary tumor, the growth appears to have much more affinity with carcinoma than with sarcoma, though the manner in which it spreads by the blood stream directly and at an early period is more characteristic of the latter class of growths. In view, however, of the peculiar circumstances of its period of occurrence, they are inclined to agree with Marchand, that it should rather be regarded as a

tumor *sui generis*. On this point judgment may be suspended till more is known about such tumors and about the chorionic epithelium."

Laboratory Notes. By Richard Muir (Edinburgh). (*Jour. Path. and Bact.*, No. 3, 1898.) A Simple Method of Restoring the "Spiking" of the Bacillus Anthracis in Gelatine Stab Cultures.—After noting the loss of this phenomenon, in conclusion the author states that it may be restored "by simply making a culture of the old non-spiking organism on a freshly-prepared blood-agar tube and incubating it for twenty-four hours at 37° C. If subcultivations be made from the blood-agar culture by stabs in 10 per cent. gelatine peptone medium, and incubated for two days at 20° C., it will be found that the organism has recovered its powers of spiking as completely as if it had been taken directly from anthrax blood."

A Modification of Pitfield's Method for Staining Flagella.—Coverglasses cleaned by Van Ermengem's method are spread in the usual manner and allowed to dry in the air:

(a) *The Mordant.*

Tannic acid, 10 per cent. watery solution (filter).....	10 c.c.
Corrosive sublimate, saturated watery solution.....	5 "
Alum, saturated watery solution.....	5 "
Ziehl-Neelsen's carbol-fuchsine stain.....	5 "

Mix thoroughly, and put in test tubes which are then centrifugalized; or, if a centrifuge is not available, the mixture may simply be allowed to stand over night. A thick deposit will be found at the bottom of the tubes or vessel, and the clear-colored fluid above it should be removed with a pipette and transferred to a clean bottle. This mordant will keep good for one or two weeks.

(b) *The Stain.*

Alum, saturated watery solution (filter).....	10 c.c.
Gentian-violet, saturated alcoholic solution.....	2 "

The stain will keep for two or three days. This stain can be used in the mordant, in place of the carbol-fuchsine stain. To stain, "pour on as much of the mordant (a) as the coverglass will hold, heat gently over a flame till the steam begins to rise, allow to steam for about one minute, and wash well in a gentle stream of running water for about two minutes. Then dry carefully over a flame, and when perfectly dry pour on some of the stain (b). Proceed as before, steaming gently over a flame for about one minute, washing well in running water for one or two minutes. If black-stained preparations are preferred, treat with Gram's iodine fixing solution for one minute, drying over a flame, and finally mounting in Canada balsam."

The Gonococcus in the Purulent Secretions of the Genital Organs of Prostitutes. Kopytowsky (*La Gynecologie*, 1898) examined the purulent discharge of 300 patients. In 6% of the cases he found gonococci in the pus from the urethra; in 28% in the glands of Bartholin; in 9% in pus from the cervical canal. Immediately after menstruation the number of gonococci in the cervical canal is increased, and occasionally they

may be found at this time when at other times they are not demonstrable. The author did not find the gonococci a single time in the vaginal pus, although other bacteria were abundantly present. The foregoing leads the author to believe that in the treatment of gonorrhea in the female, more attention should be paid to the destruction of the gonococcus in the urethra, neck of the uterus and glands of Bartholin.

The Conditions Favoring Exflagellation of the Malaria Parasite. Wilson (*Jour. Trop. Med.*, Nov., 1898) refers to Ross's article (*Brit. Med. Jour.*, Jan. 30, 1897) calling attention to the gain made by exposing the blood to air, thereby favoring the development of flagellate forms of the malaria parasite. In recording a case he gives details which may be abstracted as follows: A mount made in the usual way, with the ring of vaseline, after 15 minutes showed 17 fields with 15 crescents and 4 round forms. Another slide, after 20 minutes, showed 16 fields with 13 crescents, and a similar slide after 40 minutes showed 17 fields containing 12 crescents and 7 spheres, no flagellate forms. In experiments 2 and 3, a drop of blood was exposed to the air from $\frac{1}{2}$ minute to 2 minutes before being placed on the slide. In these examinations 73 fields gave 21 crescents, 8 ovals, 50 spheres and 4 flagellate forms. This appears to demonstrate that the development of flagella was furthered by the exposure of the blood to the air. In order to further satisfy himself, the author pricked the finger through vaseline and permitted the drop of blood to remain for one hour under the thin film and then examined it. In this experiment he was able to demonstrate only crescents.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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The Effect of Asphalt and Wooden Pavements on the Atmosphere. Polak (*Annales de l'Institut d'Hygiène*, Brussels, 1898) has made chemical and bacteriological examinations of various stone, wood and asphalt pavements at Warsaw. The wooden pavements were of blocks of pine impregnated with copper sulphate. The defilement of the wooden pavement, as shown by chemical methods, was greater at the sides than in the middle of the street. Not the least interesting of Dr. Polak's observations were those in which he attempted to estimate the comparative pollution of the atmosphere by effluvia from wooden and other pavements. He claims

for his method of doing so that it is simple, easy, and, to a certain extent, exact. The writer's contention is that the results show that asphalt is more wholesome as a pavement than wood. Wooden pavement gives, he considers, absolute protection from contamination to the soil and to the subsoil water, but it gives rise to far greater atmospheric pollution than asphalt (*Brit. Med. Jour.*, Vol. II., No. 652).

Climate of the Egyptian Soudan. Felkin (*Brit. Med. Jour.*, Dec., 1898) said in the course of a paper read before the British Balneological and Climatological Society that, roughly speaking, the ninth degree of north latitude divided the country into two parts. To the north were deserts, rocks, an Arab population, a high mean annual temperature (over 85° F.), a dry atmosphere, and slight rainfall (under 5 inches north of Dongola, under 10 inches north of the Sobat). Khartoum was unhealthy, owing to its situation. South of the ninth degree north the country was very fertile; it had a high mean temperature of about 75° F.; the range of temperature was slight (about 10° F.), and the humidity was over 70%. This area was inhabited by negroes. Dr. Felkin referred to the blocks which occurred in the Nile owing to floating vegetation; he explained the cause, and showed how they could be prevented. He mentioned the area where Anglo-Saxons might be expected to thrive when once a method of rapid transport had been secured. He concluded by referring to the prevalent diseases — malaria, dysentery, diarrhea, guinea-worm, etc. He said that it was noteworthy that malaria and phthisis did not occur together in Central Africa, and he mentioned some interesting results which he had obtained with tuberculin in malaria.

Cancer in Relation to the Dwelling. Symons (*Lancet*, Nov., 1898) read a paper under the above title before the Society of Medical Officers of Health. He said that he turned his attention to this subject in the hope that the study of the vital statistics of Bath, a city notorious for its high mortality from cancer, and the population of which was exceptionally constituted, might throw some light on certain aspects of the etiology of cancer. For forty years the population of the borough had been stationary, amounting to about 52,000, of whom two-thirds were females. The proportion of persons over sixty-five years of age was 76, as against 45 in England and Wales, and of children under five years of age 89, instead of 123, per 1,000 living; while that of persons living on their own means was 101, as against 36, Hastings only among towns in the southern counties having a like proportion. At the same time cancer had shown a steady increase until the deaths were 50% higher than they should be after correction for age and sex. Dr. E. N. Nason, Dr. T. W. Blake, and Dr. Lloyd Jones had endeavored to establish a relation between the conditions of the habitations of a people and the prevalence of cancer, Dr. Nason maintaining its preference for low-lying, damp dwellings, as Mr. Haviland had for places liable to floods; but the high death-rate of Shrewsbury could not be so explained, since but a small part of the town was affected by the inundations. The city of Bath, situated in a deep valley traversed by a sluggish river, on a dense surface

soil overlying lias and oolite, with ground-springs and hard water, and surrounded by steep, in some places precipitous, hills, from 300 ft. to 500 ft. in height, presented every variety of site. Some local practitioners believed in the existence of a "cancer zone," but he could find nothing in the distribution of the cases to support this opinion, though there were some peculiarities, as that of a street in which 13 deaths had occurred in ten years on one side and only one on the other. Neither the elevation nor the aspect nor the class of house seemed to have any constant relation to the incidence of the disease.

SURGERY.

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The Laborde Method of Resuscitation in Connection with Anesthesia. Herzog (*Cent. für Chir.*, 1898), by his experimental work, has taken great pains to prove that the Laborde method has no value in resuscitating patients who have been pushed so far under an anesthetic as to cease breathing. Laborde has frequently stated and proved that his method of resuscitating by the rhythmical traction of the tongue is due to reflex stimulation, and has never claimed that it would resuscitate when the reflexes are abolished. The folly of proving that it will not act after the reflexes have been destroyed and respiratory stimuli paralyzed by an anesthetic is self-evident.

C. L. L.

A New Operation for Stone. Nichols, in a recent number of the *Columbus Med. Jour.*, reports a new technic for opening the bladder in suprapubic lithotomy that does away entirely with rectal and intra-vesical distension. After the suprapubic incision has been made through the skin, a sterilized catheter, having preferably a long curve, is introduced into the bladder, and its point carried well up behind the pubes till the bladder wall is made to protrude in the abdominal wound. A ligature is now carried through, which serves as a retractor and is later used to anchor the bladder. An opening is made in the bladder wall below this stitch and the fingers introduced. An assistant passes two fingers into the rectum and lifts the posterior bladder wall. Thus a practical bimanual palpation of the entire bladder wall can be made, or a stone can be readily found and removed by the forceps. The wound in the bladder is not closed by stitches, but the bladder is anchored high up by fastening the anchoring stitch in the upper

angle of the abdominal wound. The abdominal wound is closed by superficial interrupted sutures. A catheter is tied in for a few hours, to be followed by regular catheterization to prevent distension. In the case in which the author has employed this method, good results were obtained in spite of many difficulties and an unruly patient.

Chloroform in India. A. Neve (*Brit. Med. Jour.*, Nov. 5, 1898), after collecting valuable statistics from the larger hospital centers in India, gives the following conclusions: 1. There is considerable evidence that in India the mortality from chloroform does not exceed 1 in 8,000 cases, and in some of the larger institutions it is less than 1 in 20,000. 2. This safety does not appear to be due to any special constitutional condition of Indian races, and but little to their habits. 3. It is probably due entirely to the warm atmosphere, which favors the rapid action of the drug and its rapid elimination. 4. To obtain similar safety in other countries, it would be advisable to assimilate the conditions of administration. (a) To operate in well-ventilated rooms, in a temperature not below 70° F. (b) To observe the cardinal rules so long taught (but often not observed) in Edinburgh, namely, to produce anesthesia gradually; to dilute the chloroform with plenty of air; to watch the respiration closely; to test the corneal reflex, and observe the pupils and color of the patient; to keep the respiratory channels free from all obstruction, and to keep the patient in a recumbent position; never to "pile on" chloroform in cases of struggling, but to give more fresh air.

End-to-end Anastomosis of the Intestine. Johnson (*Am. Pract. and News*, Nov., 1898) describes a method which he has devised for facilitating end-to-end anastomosis. It consists in passing into the ends of the intestine a cylinder of vegetable corresponding to the lumen of the intestine, followed by the employment of the ordinary Lembert suture. His claim, that it facilitates suture by those who are not fully conversant with the technic of the ordinary end-to-end anastomosis is true, but the same is true of the intestinal anastomosis forceps that have been lately devised, while the latter have the advantage of leaving the lumen of the gut entirely free. Both methods, of course, facilitate the operation, even in the most skilful hands, but neither of these methods marks such an advance in intestinal surgery as did the Murphy button. Advance in this direction must be looked for in improvements in the design and the overcoming of the objectionable features that have been found in the mechanical devices, which produce a rapid anastomosis without the necessity of sutures.

Treatment of Sarcoma by Coley's Fluid. Battle (*Lancet*, Nov. 19, 1898) exhibited before the Medical Society of London a case of sarcoma in which a marked effect had been produced by Coley's fluid. Half-minim doses were injected, and a total of 24 minims was used in three months' treatment. The growth had diminished till it could not be detected. Microscopical examination had shown it to be composed of spindle cells,

with some large cells. There had, however, been no absolute demonstration of its malignant nature.

Successful Removal of Stones of Unusual Size from Both Kidneys. Brook (*Brit. Med. Jour.*, Nov. 5, 1898) reports a remarkable case of successful removal of renal calculi from both kidneys. The stones were of unusual size and were removed at separate operations. The fact that the second and larger stone was not recognized at the time of the first operation is an excellent illustration of the quiescent character of some cases of calculous nephritis, and shows how difficult it is to make a diagnosis by ordinary means in the great majority of cases. The larger stone weighed 3iv, the smaller 3iii. The kidney first operated upon contained the smaller stone, and was the one that secreted the most of the urine. The remains of the left kidney probably secreted the majority of the pus that was found in the urine. Although the larger stone had destroyed so much of the kidney substance, it did not produce any marked symptoms until its weight dragged the kidney from its moorings. In both stones the subjective symptoms were remarkable by their absence.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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The Local Use of the Aqueous Extract of the Suprarenal Glands of the Sheep in the Nose and Throat. Henry L. Swain (*New York Med. Jour.*, Dec. 24, 1898) has used the aqueous extract which is prepared from the dried saccharated glands. A solution is made from this by adding ten to twenty grains to half a drachm of cold water, and having thoroughly stirred the powder in, the whole is filtered. The result is a red-dish-brown fluid. It is unstable and will not keep longer than three days, the formation of a deposit being a sign of decomposition. A small amount of alcohol added to the solution seems to render it more permanent. It should not be used with other drugs in mixture, as it works best alone. When sprayed on moist mucous membranes, it gives a sensation of slight warmth and stimulation, and produces immediate blanching by virtue of the long recognized power it has of causing the peripheral vasomotor apparatus to contract the small blood vessels. The parts touched by it immediately blanch to a most livid white, then very gradually contract to a considerable degree, but only over the area directly moistened. Frequent use does not seem to promote tolerance of the drug, and there is no loss of tone of the vessels, as is the case when cocain is employed. No untoward effect seems

to be observed, either locally or constitutionally. There is no danger of a local tolerance of the tissue or a general habit of the patient being acquired. It can be employed in conjunction with cocain to prolong and fortify the action of the latter drug. The experience of the author is summed up as follows: "First. We have in the aqueous extract of suprarenal glands a powerful local vasoconstrictor agent and a contractor of erectile tissue, which it is safe to use in very considerable amounts without any dangerous or deleterious effects locally, or to the general constitution of the individual. Second. These local effects can be reproduced in the same individual apparently any number of times without entailing any vicious habit, either to the tissue or to the individual. Third. The use of the extract seems rather to heighten the effects which may be expected from any given drug which may be locally used after it. Fourth. In acute congestions it has its widest application and greatest opportunity for good, but also in certain chronic conditions of the hay-fever type, where edematous tissue seems prone to develop, it can be relied upon as one of the most helpful adjuvants which we have at command. The only difficulty seems to be in producing it in quantities and in preventing decomposition on standing, which objection will probably be easily overcome by laboratory experiment."

Applications of Suprarenal Liquid, one per cent., in the Treatment of Hyperemic Laryngitis. Sargnon (*Lyon Med.*, No. 40, 1898) has used, in the service of Dr. Garel, applications of suprarenal liquid 1% in acute laryngitis and six other cases. The same medicament, employed in ocular lesions, had shown on the vessels of the cornea a vaso-constrictor power that M. Sargnon had sought to avail himself of in the laryngeal mucosa. Close observation of the six cases reported by M. Sargnon is not, unhappily, of a nature to strengthen our conviction, for if the suprarenal liquid does cause contraction of the vessels, this action is too fleeting to be utilized with profit. On a conjunctival inflammation, at first Bates, then Dor and Barraud, obtained a constriction of the little vessels, which permits cocain to produce its anesthetic effect. Mullen tried this remedy on the nasal mucosa, and praises it. According to his idea, it produces a great vaso-motor constriction, increases the anesthetic effect of cocain, prolongs its action and arrests hemorrhage in the incised tissue. It is true that this author always followed the employment of suprarenal extract by an application of 5% cocain. We have taken occasion to experiment on our own pituitary membrane as to the vaso-constrictor and anesthetizing effect of the suprarenal extract. There was no appreciable result. We neither experienced contraction of the mucous membrane nor was there any loss of sensation. The remedy had for its sole effect the production of a sensation of smarting which was very disagreeable; therefore, until proven to the contrary, we remain skeptical on this point (*Rev. Heb. de Lar. de Otol., et de Rhinol.*, Nov. 26, 1898).

Submucous Treatment of Hypertrophic Rhinitis (Die submucöse Behandlung der Rhinitis Hypertrophicans). Hamm (*Monats. f. Ohrenheilk.*, No. 9, 1898), instead of employing the galvano-cautery on the submucosa, as proposed by Bloebaum, which would, according to the

author, prove sufficient, in certain instances, to destroy the mucous membrane, injects a 10% solution of chlorid of zinc beneath the membrane. These injections are made, after cocainization of the mucosa, by means of a Pravaz syringe with a needle point, and 50 centigrams are injected between the membrane and the bone. The pain attendant upon this operation is trifling, especially if an interval of three minutes is allowed to lapse between the submucous injection of the cocain and the zinc solution. An excellent result is obtained, a cure in the affected turbinate usually resulting in a week after the injection. The proceeding is analogous to that proposed by Lannelogue for the radical treatment of hernia, and to the treatment applied by Landerer to small cystic tumors (*Rev. Heb. de Lar. de Otol., et de Rhinol.*, Dec. 3, 1898).

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Intramuscular Injections of the Biniodid of Mercury in Atrophy of the Optic Nerve. Reiss (*New Orleans Med. and Surg. Jour.*, Nov., 1898) describes the gradual evolution of the extraoral method of administering mercurial salts by the Italian school, chiefly by Rampoldi, until its adoption by Abadie, Panas and other French ophthalmologists. At first hypodermic, subconjunctival and intravenous injections were used. But to avoid pain and inflammation, soluble salts introduced into the muscles offered the best means. Inspired by his promising observations in Panas's clinic in Paris, Reiss was led to try the biniodid in atrophic conditions of the optic nerve. By its continued use he has obtained considerable benefit, even in non-specific cases. The solution is the same as that used by Panas at the Hotel Dieu. The injections are given daily, in series of forty, with about two-week intervals of rest. The biniodid is dissolved in olive oil which has been washed in alcohol and then sterilized. The process of preparation consists in taking 1,000 cubic centimeters of olive oil, to which is added 300 cubic centimeters of alcohol. This is mixed and left together for four or five days, being careful to agitate the mixture from time to time. The alcohol is then decanted. The oil is then free from oleic acid. After this it is brought to a temperature of 110° or 115° C. for ten minutes, and then allowed to stand until it is reduced to 60°. The biniodid of mercury is at this time dissolved in the oil. The solution is filtered on sterilized cotton and put in sterilized bottles. Every 100 c.c. of the oil must dissolve 0.40 centigrams of the biniodid of mercury. It must be kept in colored

bottles to prevent its being altered in its composition by rays of light. By reason of the great muscular structure of the buttocks and the absence of the risk of coming across any large vessels, this region has been chosen as the seat of the injection. All antiseptic precautions must naturally be taken, and for that reason a platinum needle is used, which can be brought to a red heat over an alcohol flame before its introduction. It is also necessary to wash the part where the needle is to be introduced with a 1-4,000 bichlorid solution immediately before the injection is given. Four milligrams is the dose given at each injection, and this proportion is found in 1 c.c., which is the quantity injected.

Remarks on the Surgical Treatment of Cataract based on 750 Cases of Extraction. Neve (*Indian Med. Rec.*, Oct. 1, 1898) analyzes a series of 750 cases of cataract extraction performed by his brother and himself at the Kashmir Mission Hospital. The general results were: Successful, 677; failed, 36; left the hospital, result unknown, 14. In the last 200 cases the percentage of failure had been reduced from 6% to $3\frac{1}{2}\%$, and in this connection he makes the following summary of his observations: (1) Careful selection of cases is the most important factor of success. (2) Hardly second to it is the employment of scrupulous antiseptic technique. (3) A large percentage of eyes, the conjunctival sacs of which are in a doubtful condition, can, nevertheless, be operated upon with success after careful preliminary antiseptic and astringent treatment for days or weeks. (4) Under such conditions, however, naturally, the percentage of failure rises sharply. (5) But the measure of success attained amply justifies the additional risk. (6) Previous iritis has a particularly prejudicial effect on the results. (7) The omission of iridectomy, while producing excellent results in the majority of cases, does undoubtedly increase the risk of prolapse of the iris and also of occlusion. On the other hand, the danger of vitreous loss is diminished. (8) The attempt to extract the lens in its capsule is so frequently attended with vitreous loss, that it should be restricted to cases where the lens nucleus is small. (9) As an all-round operation, Von Graefe's linear extraction with iridectomy is the most suitable, and, in the long run, gives the best average results.

The Treatment of Granular Conjunctivitis by Salicylic Acid. Moty (*Gazette des Hopitaux*, Nov. 22, 1898) recommends the application of salicylic acid in alcoholic solution in cases of granular conjunctivitis. He uses a solution containing salicylic acid 3 grams, alcohol at 60° C. 30 grams. The lids are everted and held by the left hand, and the solution is applied to the granules by means of a mop of cotton on an applicator, with the right hand. A wet antiseptic tampon is squeezed over the lids before and after the application. The two eyes are treated successively. The applications are used every day, every two days, or every week, according to the progress and severity of the case. Salicylic acid acts much like silver nitrate, but is well tolerated in corneal disease. Moty has had good success with this treatment for over four years. Of course, the usual accessory treatment is necessary.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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1. Tuberculosis of the Bladder, Etiology and Pathology. 2. Symptoms and Treatment of Tuberculosis of the Bladder. Coplin and Horwitz (*Jour. of Cutan. and Gen.-Urin. Dis.*, Dec., 1898) report a case of vesical tuberculosis, giving their views on this affection. (1) Coplin ascribes the apparent increase in the frequency of vesical tuberculosis to the greater skill in recognizing the condition. The case is that of a man, 23 years old, white, tailor. He died of what was supposed to be pneumonia. Had had bladder trouble for some years, which was diagnosed in Europe as stone in that viscus. The post-mortem revealed, among other pathologic conditions, old adhesions of both pleurae, miliary tuberculosis of both lungs and enlarged spleen. The bladder was found contracted and contained 20 c.c. of pus-like fluid. Just above the opening of the ureters there was a round ulcer, $2\frac{3}{4}$ inches in diameter, with elevated and thickened edges. In the upper part of the posterior wall another small ulcer was found. Both, on further microscopic examination, proved to be typical tubercular ulcerations. Considering the etiology, the author believes that a large proportion of cases are induced by the urine carrying the bacillus from the kidney or ureter, the bladder becoming involved by mural implantation. Next in order of frequency is the direct extension from the ureter. Less commonly the infection is derived from tuberculosis of the prostate, rectum or other contiguous organs. There is also a possibility of the bladder becoming involved in tuberculosis of the seminal vesicles, but this is rare. The least common of all is infection from the blood stream. Age and family history play the same part in diagnosis as in other forms of tuberculosis. (2) In discussing the symptoms, Horwitz says that their severity will depend upon the stage and development of the tuberculosis and the co-existence of secondary infection by pus-cocci. The onset, as a rule, is insidious and likely to be mistaken for a slight affection. As the disease advances, the symptoms strongly resemble those of calculus. At first there is a frequent and urgent desire to urinate; then pain manifests itself, increasing in severity as the disease advances. It is felt, in the male, about the middle of the penis; this differentiates it from calculus, where the pain is felt at the meatus. Inability to completely empty the bladder is one of the late symptoms. Hematuria, which is very profuse when ulceration exists, is frequently an early symptom. In the last stages of the disease the walls of the bladder become greatly thickened and contracted, making the capacity of

the viscus not over one or two ounces. When infection of the bladder is derived from contiguous tissues, the symptoms will point to the organs primarily involved. The tubercle bacilli in the urine are not found with sufficient frequency or constancy to form a reliable guide in diagnosis. Their absence, therefore, is not conclusive. In suspected cases, where an ordinary examination has failed to reveal the presence of the tubercle bacilli, an experimental inoculation should be made on a rabbit. The reaction of the urine will be acid if the mucous membrane alone is inflamed, but becomes alkaline as the disease becomes interstitial. As to treatment, it is very unsatisfactory, and, considering the invariably grave prognosis, it can only be palliative. Dietetic, climatic and hygienic measures play an important part also in this form of tuberculosis. Of drugs, the author uses only those which are anti-tubercular and urinary antiseptics. Guaiacol and creosote are the most valuable. Of the principal urinary antiseptics, he found of most service salol, methylin blue, in 2 gr. doses, and urotropin, in 5 gr. doses, four times daily. Pain should be relieved by suppositories of opium and belladonna. When permanent drainage becomes necessary, a suprapubic cystotomy is the only means of relief.

A. R.

On the Treatment of Nocturnal Pollution and Premature Ejaculations. Popper (*D. Med. Wochenschr.*, No. 43, 1898) found that whether the nocturnal emissions be produced by the swelling and hyperemia of the caput gallinaginis, causing peripheral irritation, which during sleep stimulates the ejaculatory centers, or the premature ejaculations be due to swelling and hyperesthesia of the verumontanum, electricity will be beneficial in both instances. He applies to the caput gallinaginis a galvanic current of 1-2 milliamperes; 5-6 sittings, with intervals of 5-6 days, are all that are necessary.

A. R.

The Surgical Treatment for Some Forms of Disease of the Prostate Gland and Seminal Apparatus. Benninghoff (*Penn. Med. Jour.*, Jan., 1899) summarizes his article as follows: Enlargement of the prostate gland is generally due to gonorrheal disease of seminal ducts, vasa deferentia, or epididymis, on one side or both; any part of the seminal vesicles or vasa deferentia being diseased, the epididymis always being so. Disease of the epididymis, one or both, produces sympathetic enlargement of the prostate gland, which recovers upon removal of the diseased epididymis. Disease of the epididymis seems to be active in continuing disease of the seminal tract, at any part, and removal of the epididymis has a favorable effect in curing the same. Sclerotic epididymis, like an indurated and hardened post-cystic ovary, has no active or passive function, except as an organ of irritation, and its removal, while arresting the irritation, does not change the copulative functions. When disease of the epididymis is restricted to one side, that epididymis alone should be removed; when to both sides, both epididymi should be removed. The testicles should be spared, at least until after trying the above measures and failing to cure.

LAB. J. L.

Electrolysis and Cataphoric Medication. Overall (*Jour. of Amer. Med. Ass.*, Jan. 21, 1899) says that impotency is almost invariably the result

of chronic prostatitis in men past 40 years of age (when it is not due to inebriety or organic cerebro-spinal disease). The chief causes of chronic prostatitis are strictures, urethritis, cystitis, rectal ulceration and rough treatment of strictures by the forcible introduction of sounds. The hypertrophy of the prostate of old age should not be confounded with the swollen prostate of chronic prostatitis. The treatment recommended by Overall consists in electrolysis and cataphoric medication. The cataphoric electrodes may be introduced into the urethra or rectum. Rectal cataphoresis is preferred when the urethra is tender. A number of cases of chronic prostatitis, cystitis, and urethritis, and several of impotency and spermatorrhea, are reported in which cataphoric treatment brought about a cure. The solution employed was generally one of boric acid.

LAB. J. L.

GYNECOLOGY.

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Congres periodique de Gynecologie, d'Obstetrique, et de Pedi-atric. (1) Platon, of Marseilles, in reporting the Congress, mentions a case of pregnancy with a double uterus occurring in the practice of M. Queirel. The woman had a double uterus with an incomplete partition of the vagina. The first pregnancy, in 1893, continued to full term, and the labor, after slow dilatation, was terminated by the application of the balloon of Champetier, and the painful delivery of a dead child, there being a breech presentation. In 1897 a second pregnancy was followed by a less painful delivery, but resulting, as before, in the death of the infant. In case of pregnancy, these genital malformations almost always bring vicious presentations, generally that of the shoulder. Labor is always painful, and the woman is sometimes exposed to such terrible complications as the rupture of the uterus. Schroeder attempted the ablation of the uterine partition, after which the patient was able to be delivered at term and without difficulty. (2) Platon also refers to the recent extension of organo-therapy. Since the advent of the Sequardian method, Professor Villeneuve has employed extracts of testicular juice. This directs attention to the attempts made at the Hotel Dieu, of Marseilles, to use injections of the testicular fluid of the guinea-pig for cancerous affections. In all these observations, these subcutaneous injections were followed by considerable augmentation of strength and an appreciable increase of appetite. The revivifying action recalls that

of the injection of ovarian extract for chloro-anemia advocated by Dr. Spielman. Would not these extracts of ovary have a still more energetic action upon uterine cancers? (*Gaz. des Hopitaux*, 1898.)

Un Procédé de Vagino-fixation. M. Richelot (*Gaz. Med. de Paris*, 1898) recognizes all the accidents during pregnancy and at term following vagino-fixation, but says that they are the result of bad technique. In order to avoid them, it is necessary to place the sutures exclusively upon the anterior surface of the uterus and below the tubular orifices. As during pregnancy, the uterus develops especially at the fundus, therefore it is essential that the fundus should always be left free.

Ectopic Gestation Associated with Primary Tuberculosis of the Fallopian Tube. Shober (*Amer. Jour. Obstetrics*, Dec., 1898) reports a case of ectopic gestation associated with primary tuberculosis of the Fallopian tube. On microscopic examination the most striking feature of the tubal cross section was the almost complete obliteration of the epithelial lining. In the majority of sections, not only was the lumen obscured, but the tubal mucosa entirely replaced and the walls invaded for a considerable part of their thickness by closely-packed, round cells. Areas of mucosa resembling miliary abscesses were numerous. The primary tuberculosis of the tubes had evidently existed for many years. The left tube being sufficiently patulous to permit the passage of spermatozoa throughout its length, the ovum was probably impregnated immediately upon the rupture of the Graafian follicle, and, not being able to proceed further by reason of the condition of the tube, implanted itself upon the surface of the infundibulum or upon a fimbria, and went on to develop, until it finally ruptured, at about the end of the fifth week.

Contra-indications to Operation on Uterine Fibroids. Chandelux, of Lyons (*Le Semaine Medicale*, Dec. 7, 1898), thinks that the complete effacement of the cervix, in case of a voluminous fibroma of that organ, ought to lead more frequently to the suspicion of a subperitoneal development of a tumor creating grave operative dangers. This sign constitutes a contra-indication to surgical intervention. The condition of the os uteri can equally indicate the advisability of an operation, when one has determined by auscultation the presence of large veins on the surface of the uterine fibroma, having attained a greater or less volume. In these conditions, it is known we cannot operate without danger, unless the tumor can be raised, forming a pedicle, when hemorrhage can be arrested by simple constriction of this pedicle. But it has been shown that we can rightly count upon this rapid formation of a pedicle only in those cases in which the cervix has preserved a portion of its normal characteristics. When, on the contrary, the cervix is notably deformed or effaced, there is grave danger that during the operation such hemorrhages may occur as will place the life of the patient in immediate peril.

Application of Heat to Uterine Cancer. Westermarck, of Stockholm (*Centralblatt für Gynakologie*, Dec. 10, 1898), reports favorable results from the use of constant heat in cases of inoperable ulcerating cancer

of the uterus, thus further extending the method of Welander, who had advocated its use in ulcers. He uses a specially devised apparatus having a spiral silver tube, through which hot water constantly circulates, this spiral being introduced into the vagina. He has used the method in seven cases, obtaining good results in all of them. The odor and bleeding soon disappeared and the patients made rapid recoveries. In two cases, which he reports in detail, the heat was maintained constantly for forty-eight hours, at a temperature ranging from 42° to 58.5° C. He had good results also in using a temperature of 42° to 44° C.

Central Laceration of the Perineum. Voitouriez (*Jour. des Sciences Medicales de Lille*, Dec. 3, 1898) remarks that central ruptures of the perineum during delivery are very rarely observed in practice. Delcroix, in 1891, could collect only 75 well-authenticated cases; but Voitouriez himself, in the service of M. Duret, recently saw a case of complete central perineal rupture in a patient 18 years of age. He defines the central rupture of the perineum as beginning in the center and radiating in different ways, but always leaving the anus and vulva intact. The most common agent of this rupture is the head of the infant pushed by forcible contractions of the uterus against the perineal band; nevertheless, in rare cases, it is the coming arm, or a foot in breech presentation, which issues by the break made in the perineum. Voitouriez distinguishes three kinds of central rupture: (a) In the first case, the skin of the perineum only breaks, the obstetrician perceiving this in time, rapidly terminates the labor either by the forceps, or by the aid of episiotomy. (b) In the second case, all the thickness of the perineum is torn; but the head and body of the child are delivered by the vulva. In a case of this kind, one can observe the coming of an arm or a foot by the perineal opening. (c) In the third case, the central rupture of the perineum is said to be complete; the head and body of the infant are delivered by the abnormal orifice, also the placenta. From an anatomo-pathologic point of view, the characteristics of a complete central rupture are: (1) The integrity of the vulvar fourchette; (2) the persistence of the anal sphincter; (3) the tearing, by bursting, of the posterior vaginal wall to an extent sufficient to give issue to the fetal head; (4) the rupture of the muscular floor of the perineum; (5) of the skin of the perineum. The causes of the central rupture are of three classes: those arising from some unusual form of the bony pelvis, or those pertaining either to the perineum, or to the uterine muscle itself. The treatment of central rupture of the perineum is preventive and curative. When one finds in the last stages of labor, in connection with a large, lax and greatly-bulging perineum, that the vulva is pressed up very high and forward, and the examination of the pelvis indicates danger of a central rupture, it can be avoided by certain means. First, the rectal maneuver, which consists in introducing one or two fingers into the rectum and pushing the head forward to aid in passing the vulva. Second, episiotomy, which consists in incising the vulva and sectioning the hymen in case of narrowness and rigidity. The posterior median incision seems preferable in this case. Third, the application of forceps, which permits a rapid and sure delivery per vias naturales.

The Conservative Surgery of the Ovary. Martin (*Med. Press and Circular*, Nov. 16, 1898) advocates more conservative surgery of the ovary. The physiological value of the ovaries may be best realized by noting the results of complete extirpation of both glands. (a) The woman becomes absolutely sterile. (b) Menstruation ceases in about 95% of the cases. (c) The uterus, and, to a less extent, the vagina and vulva, undergo a process of atrophy. (d) The nervous symptoms of the menopause appear abruptly and violently, viz., heats and flushes, perspirations, palpitations, giddiness, depression of spirits, and a generally unstable condition of the nervous system. (e) In a majority of cases there is a diminution or total abolition of the sexual instincts. (f) The patient has a tendency to obesity. Now, if one ovary, or even only a portion of one ovary, be left behind, none of these symptoms appear. There is physiologically no difference between a woman with half an ovary and a woman with two ovaries; but there is a great difference between a woman with half an ovary and a woman with none. It is remarkable how small a fragment of ovarian tissue is necessary to preserve the full influence of the gland on the body.

Vaginal Section. Taylor (*Pacific Med. Jour.*, Dec., 1898) has been convinced, by his recent experience, of the superior merits, in the majority of cases, of vaginal section as a better and more conservative procedure than abdominal incision, for the relief and cure of diseased conditions of the pelvic organs. After preparation of the vagina, the patient is placed in the lithotomy position on a table with shoulder braces which can be converted into the Trendelenberg position. Long blade retractors are employed. After the vaginal incision has been made, pads of sterilized gauze with long tapes attached are placed above the tubes and uterus, making a complete septum between these organs and the intestines and omentum, which keeps the intestines up and out of the way. All adhesions to the bowel are broken up and the bowel well protected before operating upon the tubes or ovaries. The ureters are well guarded by keeping the bladder pressed forward and cutting close to the uterus. The posterior vaginal rent can be closed by two or three sutures, or, if drainage is desired, the Mikulicz method may be employed. The major points of preference for this method are: It gives less shock to the patient. It is not so dangerous an operation. There is not the risk of hernia. It insures better drainage and more rapid recovery. It permits unabsorbable ligatures to be tied and left exposed in the vagina till they are ready to be taken out, a few days later. And, finally, Taylor believes that the nervous phenomena are much lessened after vaginal section, when the whole or part of the ovaries or uterus can be permitted to remain in the pelvic cavity.

The Subjection of Women Students in Russia. The Woman's Medical College, of St. Petersburg, Russia, receives no student without a written permit from parents or husband expressing their full willingness that she may study.

OBSTETRICS.

UNDER THE CHARGE OF

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A Resume of One Thousand Cases of Labor. Hammond (*Amer. Jour. of Obst.*, Dec., 1898) gives the result of his observation in this large number of cases. Some of his deductions are: Sex, 107 males to 100 females; L. O. A. position, 80% of cases; average duration, $12\frac{1}{2}$ hours; most births, between 2 and 5 in the morning. The forceps were applied in 105 cases, and 43 were still-births.

Ectopic Pregnancy. Pond (*Vermont Med. Rec.*, Dec. 24, 1898) discusses the subject of extra uterine pregnancy and also reports some cases. The treatment recommended is immediate operation as soon as the diagnosis is made. Early operations reduce the mortality to six or eight per cent. (Kelly). If the child is viable, operation should be done at once; if nearly so, operation may be delayed until the child is viable.

The Use and Abuse of Midwifery Forceps. Murray (*Georgia Jour. of Med. and Surg.*, Nov., 1898) discusses the value of the forceps and the harm that can ensue when they are improperly applied, or at the improper time. The dangers are those usually given: (1) Mother's parts may be bruised, lacerated or otherwise injured; (2) the too sudden emptying of the uterus may be followed by imperfect retraction, and, consequently, hemorrhage; (3) the fetal head may be unduly compressed, lacerated or otherwise damaged. Unless there be special indications for the forceps application, as absence of pains or weakness of the fetal heart, time should not be a primary determining factor.

Is Eclampsia a Microbic Affection? Bar (*L'Obstetrique*, Nov., 1898) fully discusses the work of investigators who have endeavored to show that eclampsia is bacterial or microbial in origin. As early as 1883, Delore, at the Congrès de Blois, pointed out the symptoms of eclampsia in comparison with those of diseases due to germs, and suggested the probability of a like origin for eclampsia. Though much has been done, the results are in

no way conclusive. Examination of blood and urine shows germs that do not occur in pregnant women free from eclampsia. The results thus far simply further our belief that its origin is microbic.

Multiple Pregnancy. Crockett (*The Med. and Surg. Bulletin*, Nashville, Dec., 1898), in discussing multiple pregnancy, brings out some interesting facts. Twin pregnancy in Great Britain occurs once in every 90 to 110 cases. Two well-authenticated cases of six children at a birth are on record in this country. Multiple pregnancy is commonest in first pregnancy, in old rather than in young primiperae. It occurs most often in families that produce imbeciles, idiots, victims of club-foot and spina bifida.

A Case of Bicornate Uterus Mistaken for Ectopic Gestation. Gibson (*The Canadian Jour. of Med. and Sur.*, 1898) reports a case of bicornate uterus in which, from the presence of a dead fetus, the symptoms were somewhat similar to those of extra-uterine pregnancy. Exploratory incision disclosed an impregnated left horn of the uterus. The wound was closed, and a few days later the patient aborted. Recovery followed.

Saline Transfusion in Puerperal Eclampsia. Neale (*Maryl. Med. Jour.*, Dec., 1898) emphasizes the value of the normal salt solution in cases of eclampsia. Whatever may be its cause, we do know that these cases improve under this important measure in the treatment. It dilutes the poison that probably circulates in the blood, it stimulates the heart by increasing the bulk of the blood. Transfusion into the loose cellular tissue under the mammary gland is the preferable method. As a rule, each breast will hold a litre if injected slowly, but the amount should be regulated to suit the case. In many cases one hypodermaclysis will not suffice. A second and a third transfusion on successive occasions, and in smaller amount, will often prevent a further recurrence.

A Secret Society of Physicians. A secret fraternal order of physicians has been started in Cleveland, O., under the title of the "Palmar Arch." The object is said to be the advancement of physicians in professional work through exchange of ideas. The intention is to make of it a national organization and confer charters upon similar organizations in other cities.

A Rare Case of Precocious Menstruation. Hofacker reports the case of a rachitic girl, 9 years old, who began to walk when 20 months old. At the end of the first year a bloody discharge appeared from the vagina at intervals of 4 weeks, lasting from 3 to 5 days. At present the breasts are well developed, axilla and mons veneris covered with hair, labia majora and minora larger than normal, and the pelvis much broader than usual in a child.

INTERNATIONAL MEDICAL MAGAZINE.

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Edited by BOARDMAN REED, M.D.

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There are men who seem really to yearn for a return of the good old days when every physician could easily acquire, within two courses of lectures, about all there was to be learned in the science and art of medicine — when every patient who could not be cured by bleeding, purging, blistering, or emesis, was considered as foreordained to die, and when a pair of saddlebags could carry all the medicines and instruments required, with room to spare. Every physician in that hallowed era had to be his own apothecary, except for the assistance of the boy who presided over the mortar and pestle; and the itemized bill, which we reproduce on another page, shows how munificently he was rewarded for both drugs and professional services. This same curious old bill, which is probably about a century old, is a significant commentary, also, on the position of the practitioner of the olden times. It is difficult to believe that the medical adviser who was obliged to add to his professional function the duties of a petty shop-keeper, possessed a higher social position than the average physician of this latter end of the nineteenth century. Moreover, the fashion that required a physician to itemize such charges as one penny for a purging powder, sixpence for a worm plaster, and two shillings and sixpence for each “journey to Cargo,” is one the revival of which would not enhance the dignity and standing of the profession.

An article entitled “The Passing of the Family Physician,” which appeared in the January number of a New York medical publication, reflects a feeling of protest prevalent in certain quarters against the present tendency to specialism in medicine. The writer pays a flattering tribute to the high mental and moral qualities and commanding influence, which he believes to have peculiarly characterized the practitioner of an earlier day, intimating that we “ne’er shall see his like again.” He refers to Ian MacLaren’s Weelium MacLure in a way that would give the impression that such doctors were the product exclusively of a past age. We must take issue with the assumption that there are no more broad-minded, noble, self-sacrificing physicians of the type so powerfully limned by the novelist in his “Beside the Bonny Briar Bush.” We believe that there are any number of Weelium

MacLures quietly and unostentatiously doing their good work in the United States to-day; that the average country doctor is now as unselfish and devoted to duty as in any previous age, and far more skilful and influential than his predecessors ever were. Indeed, despite the retrogressive, pessimistic spirit which occasionally shows itself in opposition to the gigantic advances which medical science is making, there is no room for doubt that the best educated and most thoroughly equipped physicians of the present, even in the smaller towns and country places, command as much greater respect than those of fifty years ago, as their knowledge of medicine is larger and more accurate, and as their percentage of cures is higher.

The practice of medicine is simply following all the other activities of the age in the process of differentiation or specialization. To protest against this result of an inevitable evolution would seem to be as foolish as to cry out against the progress which has done away with the hand-loom and the stage coach.

It is right, of course, and ought to be the invariable rule, that every physician who aspires to be a specialist shall have a number of years' experience both in hospital and private general practice before entering a special field. It is better, too, that his final choice of such narrower field should be determined by the tastes and aptitudes developed while in his general work. But it will be useless to attempt to stem the tide of medical progress or turn it backward. Were it possible to deprive our art of the results of the thorough scientific work recently accomplished along the various special lines, the effect would be to abandon to death or prolonged suffering a multitude of patients who are now being cured.

Contemporaneously with the outcropping of professional atavism referred to above, there have appeared two notable communications which call attention to some of the things that the special workers in the medical field

The Family Physician of the Future. have lately done for the good of mankind. Chittenden, in an article which appeared in the *New York Medical Journal* of December 31st, presents a splendid catalogue of the more practical and useful contributions that chemistry has been making to clinical medicine. Referring to these, he says: "I am aware that the physician in general practice is considered too busy a man to find opportunity for elaborate chemical examination of the urine, to say nothing of the feces, sputum, gastric contents, etc., but I question very much if the time has not arrived when the physician must make use of this important aid in diagnosis." Chittenden then quotes as follows from Simon: "Diagnosis is now the password in medical science. It is inconceivable that a physician can rationally diagnose and treat diseases of the stomach, intestines, kidneys, liver, etc., without laboratory facilities."

T. Clifford Allbutt, in his most scholarly and philosophic address, en-

titled "Medicine in the Nineteenth Century," which was published in the *Bulletin of the Johns Hopkins Hospital* for December, discusses various phases of modern medical progress and refers to the outcry which has been raised against specialism. He wisely points out that while "in advancing civilization the applications of thought, as well as those of labor, must be divided and sub-divided," yet "happily evolution will be found still to consist not in differentiation only, but also in integration." In other words, there must be men whose duty it shall be to correlate the parts which hereafter will make up the mighty whole of medicine.

It has been sarcastically objected that, if the present tendency goes on, the duties of the family physician will ultimately become limited to diagnosing the diseases of his patients and then distributing them (the patients, not the diseases) around among the appropriate specialists; but the contrary is far more likely to result from the forces now in operation. General practitioners more frequently excel in therapeutics than in the niceties of diagnosis. It is precisely in the latter art that the most extraordinary progress has recently been made, and it will be henceforth impossible for any man, no matter how versatile or enduring, to become familiar with all the apparatus and skilled manipulations, as well as the chemical processes and microscopic methods that would be required to enable him to diagnose accurately all the possible diseases of every part of the human body. But, given the diagnosis, the task of conducting the treatment should, as a rule, be within the power of all intelligent physicians.

Important as are the recent advances in therapeutics, they can all be learned without great difficulty, and family physicians, who desire to hold their patients, will ultimately be obliged to perfect themselves in so many of them, at least, as do not involve much special training of the eye or hand.

Thus, it is far more likely that therapeutics will eventually become the specialty of the general practitioner, and by that time there will necessarily have developed out of the present transition state of the medical art general consultants of such great learning and breadth of view that they will be able to grasp the full significance of reports from adepts in any special branch, and to advise successfully as to the proper line of treatment in complicated cases of whatever kind.

Dr. H. P. Loomis has recently written an elaborate paper on "The Pre-tuberculous Stage of Phthisis, or the Condition which Antedates Tuberculous Development, and Some Aids to its Diagnosis." An abstract of it

Is there a Pre-tuberculous Stage of Phthisis?

appears in another part of the present number of the *INTERNATIONAL*. A careful perusal of the paper shows that the writer has had in mind two different conditions — one the early or incipient stage of phthisis, which may or may not be capable of demonstration by the usual physical signs, and the other an adynamic state or condition of diminished vital resistance

which may be due to congenital narrowness or other malformation of the chest, chronic gastro-intestinal disease, typhoid fever, malaria, pertussis, sedentary occupations pursued in crowded, unventilated rooms, or any one of numerous other depressing causes. In the first named condition, tuberculosis already exists, whether clearly recognizable or not by auscultation and percussion; therefore, it cannot correctly be called pretuberculous. In the other it does not necessarily exist and may never be contracted, though undoubtedly the lowered health and diminished vital resistance invite the bacillary infection and fully justify the rejection of such persons as recruits for the army or navy. Strictly speaking, then, there is no such thing as a "pretuberculous stage" of pulmonary tuberculosis. Phthisis doubtless often exists in an early stage with such slight involvement of the lung that we cannot demonstrate it, and yet whenever the symptoms observed, viz.: anemia, dyspepsia, loss of weight, etc., are really a result of tuberculous infection, the case is clearly one of phthisis in the tuberculous, not *pre*-tuberculous, stage. On the other hand, persons having merely a height which is excessive in proportion to their weight, diminished respiratory capacity or chloro-anemia from other causes than tuberculosis, cannot with any accuracy be described as in a pretuberculous stage of phthisis. They are naturally more in danger of becoming infected with the bacilli than others, but every experienced physician has known scores of such persons to live out their expectancy without ever becoming victims of consumption. Dr. Loomis has done the profession a service in calling attention so prominently to the various forms or phases of lowered nutrition that often pave the way for tuberculosis, as well as to the signs by which they can be recognized; but we must insist upon things being called by their right names.

There are numerous unanswerable reasons for administering the alkaloïds or active principles of remedies whenever practicable in preference to the crude drugs themselves. The proportion of the efficient ingredients in

**German Soluble
Digitalin.**

the latter is varying and uncertain, and the therapeutic results to be obtained are correspondingly unreliable.

Moreover, most vegetable drugs contain more than one active principle, and not infrequently they contain several with actions more or less opposed to each other.

Dr. Henry Beates, of Philadelphia, has for many years been an able and earnest advocate of the more precise medication obtainable by administering active principles instead of the heterogeneous combinations offered by nature in the drugs themselves or in the familiar fluid extracts, tinctures or infusions of the same. Especially has he insisted upon the greater efficacy of the German soluble digitalin (mainly digitalein) as compared with the usual preparations of digitalis. In a paper entitled "The Continuous Use of Digitalin in the Vasomotor and Cardiac Lesions of Senility," recently

published by him in the *Therapeutic Gazette*, Dr. Beates teaches that the earlier, and, to some extent, later atheromatous changes in the arteries and smaller vessels may be almost certainly remedied by a bold and persistent use of this derivative of the foxglove. He carries the dosage in bad cases to one-half grain several times a day, and has never seen any except the happiest results from the practice. Several other physicians also have reported well of this method. This is a most important innovation, and it is to be hoped that tests of the German digitalin, in comparison with the infusion of digitalis and other cardiac tonics, may be made on a large scale in hospitals where numerous chronic heart cases are congregated. We cannot learn too much about the remedies with which disease is to be cured or mitigated. But if the German digitalin proves to have the unique virtues recently ascribed to it, why not have it sold and known under some distinctive name, and thus avoid confusion? We should be pleased to hear from Dr. Beates on this subject.

When we threw out the suggestion editorially that the way to help protect the always gullible public against the unspeakable folly of Christian Science and kindred humbugs was to have the most capable medical writers

A Suggestion Anticipated.

show them up in publications designed for popular reading, we were all unconscious of the fact that precisely that very thing was even then being done. We are just in receipt of a little brochure published by McClelland & Co., of Cincinnati, embodying an address delivered by Dr. Charles A. L. Reed, by invitation, before the Northwestern Ohio Medical Association, December 8, 1898. It has been published in pamphlet form for general distribution, in accordance with a resolution of the Society. The title of the address is "Christian Science: A Sociological Study," and it does not leave this latest mystic cult a single leg to stand on — physical, moral, scientific or legal. It is simply unanswerable.

Professor Doumer, President of the French Society of Electro-Therapy, presented a paper on the treatment of constipation by static electricity before that Society at a recent meeting. The brief published summary of the proceedings leads us to hope that the full paper, when it

Static Electricity for Constipation.

appears, will contain definite and detailed directions for the successful application of the method. Dr. Margaret Cleaves, of New York, has also earnestly championed this form of treatment, and claimed it to be almost uniformly effective in her hands; and yet, most other practitioners who have essayed the method have been less fortunate, and chronic constipation continues to be as rebellious as ever — the bane of our modern civilization and the often unsuspected cause of thousands of nervous break-downs.

BOOK-REVIEWS.

THREE THOUSAND QUESTIONS ON MEDICAL SUBJECTS, ARRANGED FOR SELF-EXAMINATION. With the Proper References to Standard Works in Which the Correct Replies Will Be Found. Second Edition, enlarged. Philadelphia, P. Blakiston's Son & Co.

This handy little book will be found useful by students preparing for examination, as well as by quiz-masters in selecting their questions.

AN ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY AND ALLIED SCIENCES. By George M. Gould, A.M., M.D. Fourth edition. Philadelphia, P. Blakiston's Son & Co. 1898.

Gould's Dictionary has been one of the greatest hits among recent medical books. It has attained an extraordinary popularity—and that, too, in competition with half a dozen excellent works by scholarly and painstaking lexicographers. One of its chief merits is its copiousness, including, as it does, in addition to numerous encyclopedic features to be mentioned later, all the words, old and new, properly employed in the manifold branches that go to make up modern medical science. It gives evidence of an extraordinary amount of erudition in its author, besides a vast deal of diligent research by himself and his able co-workers, and, in spite of many rather startling changes in spelling, not all of which have yet gained wide recognition, it is likely to become and remain for a long time the standard authority. It is really a medical library in itself. Under "arteries" is found an extensive table comprising the name, origin, distribution and branches of every artery in the body. Preceding this is a scheme representing the entire arterial system. There is a similar elaborate treatment of the nerves and muscles, as well as the bones, so that the practitioner who has become rusty in his anatomy (and how many are there of us who have not?) can brush up satisfactorily with the help of his Gould's Dictionary, even though he has no work on anatomy at hand. So with materia medica and therapeutics. Under each standard drug is to be found a brief account of its principal actions, as well as the doses of each of its official preparations. Even so new a preparation as thyroid extract is well described in its appropriate place, besides a further discussion of it with other similarly-acting remedies under the head of organotherapy. The table of poisons, with their effects, antidotes, etc., is admirably full and satisfactory. But the most extraordinary result of patient, painstaking work to be found in the volume is the "Table of Tests." It contains over eight hundred tests which are more or less generally employed by physicians and laboratory specialists. The name of each is given, with its use, the reagents comprising it (often with the exact formula), the reaction to be expected, the mode of application, and remarks. For the surgeon there is an "Eponymic Table of Operations and Methods in Surgery," which covers 30 pages of the finest print and summarizes remarkably well the immense field covered by it. The same fulness and convenience of arrangement is shown in the treatment of every branch of medicine, both practical and theoretical. In short, the work is a one-volume medical encyclopedia. It is well printed and very strongly

bound, as a large octavo volume of 1,633 pages needs to be, especially when it is sure to be referred to many times daily.

A TREATISE ON "UNRIPE" CATARACT. By William A. McKeown, M.D., M.Ch., of Belfast. Illustrated by nine plates containing 60 original drawings. London, H. K. Lewis. 1898.

This book is based upon observations of about 700 cases of various kinds, extending over a period of fourteen years. The text of the book is found in the statement, in the first few pages, that the real barrier to successful cataract extraction is the difficulty experienced in removing any loose cortex. For this reason so-called "unripe" cataracts have been avoided, and patients have been put off until their cataracts have exhibited sufficient evidences of solidity to indicate ease of extraction. Dr. McKeown righteously protests against the policy of compelling persons afflicted with slowly-maturing cataract to grope their way in partial blindness, abstaining from business as well as from many worldly pleasures, until their cataracts are ripe. He also strikes a clarion note when he says that the surgery of cataract, in contradistinction to surgery generally, has been for some time practically non-progressive, and that this lack of progress is in no way attributable to the previous attainment of perfection.

Dr. McKeown reviews the various means of cataract-extraction and removal of loose cortex. He shows the unreliability of such methods as removal of the lens in its capsule, artificial softening of the cortex by preliminary needle operation Förster's method of artificial maturation, etc., and proposes instead the method which he has devised and so successfully used in 700 cases — *intra-capsular injection and irrigation*. His apparatus consists of a flat-bottomed Florence flask, stopped by a piece of cork-wood, through which are passed two glass tubes, not touching, by half the depth of the flask, the surface of the irrigating fluid (a solution of sodium chlorid in distilled water, 4 grs. to the oz.). To one glass tube is attached a rubber tube, on the end of which may be fixed, according to indications, a hollow needle for puncturing the capsule and irrigating the cortex, or a blunt tube for irrigating the anterior chamber. To the other glass tube is attached a rubber bulb to promote the flow of the liquid. This apparatus is sterilized by boiling the fluid in the flask, which gives off moving steam, and thus sterilizes the rest of the apparatus.

The order of the operation is as follows: 1. Corneal section. 2. Small iridectomy. 3. Introduction of a fine needle into the lens and free intra-capsular irrigation. 4. Introduction of cystitome. 5. Evacuation of lens by massage of cornea, corneal pressure and counter-pressure. 6. Removal of any remaining cortical substance by irrigation of the anterior chamber. The intra-capsular injection partially solidifies and furthers easy removal of a soft cortex almost immediately and without danger from increased tension. If there is any difficulty in entering the needle, it should be withdrawn, with the assurance that, even though the cortex is clear, it is sclerosed, and easy extraction may be expected.

In addition to the presentation of his method, Dr. McKeown reviews the whole subject of cataract. He proposes the best classification and description of the various forms of cataract that we have seen, in that it is objective rather than inferential. His description of antiseptics and the technic of extraction is a strong section of the book. There is a vigorous arraignment of the dangerous old-fashioned methods still in vogue. He cites, in example, the fact that the dirty and dangerous practice of using the mouth with Teale's suction

instrument is still, in these days of antisepticism (to which the modern success of cataract-extraction is largely due), referred to without warning in ordinary text-books.

It must be remembered that Dr. McKeown is not exploiting a theory. His logic is sound, and every page is forceful. There is abundance of confirmative statistics and extensive tabular annotation. It pleases us to read such a magnificent monograph on cataract. Through the monograph only can the science be advanced. The fame-bringing text-book seldom records any marked advancement. In the great number of cases it is merely a matter of editing and collation, and it is stale and useless in a few years.

We leave this excellent work with a few final words of comment. We suggest that the author somewhat modify his picture of the modern operator's fear of "immature cataract." Few American surgeons allow their patients any considerable period of disabling blindness while awaiting maturation. They operate, and by use of irrigation of the anterior chamber with one of the several instruments in the American market (our preference is Lippincott's), they obtain fairly good results. However, we acknowledge the decided advance in intra-capsular irrigation. We also suggest the elimination of such oversights as Llandolt (for Landolt), on several pages, Forster (for Förster), and chloesterin (for cholesterin) on page 36.

W. L. P.

THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the use of Practitioners and Students of Medicine. By William Osler, M.D. Third edition, entirely revised and enlarged. New York, D. Appleton & Co. Pp. 1,181.

This popular text-book has been thoroughly revised and wholly recast with a new font of type and a somewhat enlarged page, which allows increase of material without material increase of the size of the book. Dr. Osler still maintains eleven sections, but changes the titles somewhat. The section-headings now read:

1. Specific Infectious Diseases. 2. Diseases Due to Animal Parasite. 3. Intoxication and Sunstroke. 4. Constitutional Diseases. 5. Diseases of Digestive System. 6. Diseases of the Respiratory System. 7. Diseases of the Circulatory System. 8. Diseases of the Blood and Ductless Glands. 9. Diseases of the Kidneys. 10. Diseases of the Nervous System. 11. Diseases of the Muscles.

The following articles have been rewritten or are new, viz.: Vaccination, Beri-beri, The Bubonic Plague, Cerebro-Spinal Fever, Pneumonia, Malta, Gonorrheal Infection, Cancer of the Stomach, The Gastric Neuroses, Enteroptosis, The Cirrhoses of the Liver, Jaundice, The Diseases of the Bile Passages, Diseases of the Pancreas, Diseases of the Thymus Gland, Diseases of the Spleen, Lymphatism, Addison's Disease, Encephalitis, Neurasthenia, Erythromelalgia, and many shorter articles, as Hypertrophic Stenosis of the Pylorus, Ether Pneumonia, Anesthesia, Paralysis, Pneumaturia, Albumosuria, etc. Into the sections on Typhoid Fever, Tuberculosis, Rheumatic Fever, Diabetes, Gout, Parasitic Diseases, Diseases of the Blood, Heart, Lungs and Kidneys, much new matter has been incorporated. The section on diseases of the nervous system has been rearranged, and an attempt has been made to group the diseases in accordance with the modern conceptions of the anatomy and functions of the parts.

With its new features and improved material, the book is again in the front rank of text-books, and will likely enjoy the same popularity as it did in 1892 and 1893.

MEDICAL NEWS AND MISCELLANY.

A Physician's Bill in Ye Olden Time.

		T——— H——— to J——— H———, Dr.	
1768			
Jan.	7	To a worm plaster.....	£0-0-6
"		To oil of olives.....	0-0-8
"		To a bag and pipe.....	0-0-6
"	10	To Reu.....	0-0-1
Oct.	16	To a box of ointment.....	0-0-2
"	29	To two purging powders.....	0-0-4
"		To a pot of ointment.....	0-0-6
Nov.	21	To a dose of salts and manna.....	0-0-3
1769			
Jan.	17	To two purging powders.....	0-0-6
"	30	To box of mercurial ointment.....	0-0-2
Feb.	18	To liniment.....	0-0-10
April	1	To a purging powder.....	0-0-1
"	3	To three purging powders.....	0-0-10
May	27	To four purging powders.....	0-0-19
July	7	To manna & cream tartar.....	0-0-8
"		To a journey to Cargo.....	0-2-6
"	9	To ditto.....	0-2-6
"	11	To two purging powders.....	0-0-3
"	15	To journey to Cargo.....	0-2-6
"	18	To ditto.....	0-2-6
"	20	To ditto.....	0-2-6
Oct.	15	To a rhubarb powder, etc.....	0-1-0
"		To a mixture.....	0-1-10
"		To a glyster.....	0-1-10
"		To a bag and pipe.....	0-0-6
"		To a journey to Longburgh.....	0-4-0
"	17	To a plaster.....	0-0-6
			£1-8-11
1769			
		Brought over	£1-8-11
Dec.	21	To a box ointment.....	0-0-1
"		To a Peruvian decoction.....	0-2-3
"		To distilled vinigar.....	0-0-6
"		To mithediate.....	0-0-6
"		To a journey to Longburgh.....	0-4-0
"	23	To a journey to Longburgh.....	0-4-0
			£1-18-3
		To medicine and attendance to Longburgh.....	£1- 1-8
To	"	" to Cargo.....	0-16-7

 £1-18-3

Received payment in full,

J——— H———.

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VOL. VIII.]

MARCH, 1899.

[NO. 3

LECTURES.

- I. *DECIDED IMPROVEMENT IN A CASE OF LOCOMOTOR ATAXIA FOLLOWING THE USE OF THE DOUBLE CHLORID OF GOLD AND SODIUM.*
- II. *ENTERIC FEVER IN CHILDREN.*
- III. *DIGITALIS IN MITRAL DISEASE OF THE HEART.*

BY JAS. C. WILSON, M.D.,

Professor of Practice of Medicine and Clinical Medicine in Jefferson Medical College, Philadelphia.

I.

THE first case I bring to your attention is that of a man who was in the clinic in the fall of '97, and has thus been under observation for about one and one-half years. He is a sailor of thirty-three, with no important family history. Ten or twelve years ago he was taken with shooting pains in the thighs and also girdle pains. These continued up to the time he first came under notice, though treated several times for rheumatism. He then had an awkward gait, staggered in the dark, had lost control of his bladder, sexual power was absent, as were also the knee jerks. The diagnosis of locomotor ataxia was made, though the symptoms had not begun until four or five years after a specific infection.

As to the treatment, rest was advised and the double chlorid of gold and sodium was given, one-twentieth of a grain three times a day. This treatment has been faithfully carried out by the patient during the time since he was here first. I bring him to-day to speak of his present condition. He still has occasional shooting pains, but he walks better and with more confidence. He has had control of the bladder for the past six months. In short, there is a marked improvement of the case in every respect. The treatment shall be continued.

Now, this brings up the question as to the value of the long use of alteratives. They are of value in nervous diseases and in syphilis, and the point

is whether the treatment in question has brought about the result noticed in this case. Now and then there are seen statements in journals that cases of tabes have been cured, but there is among the profession a rather general belief that some error of diagnosis or other element of doubt is connected with such cases. The general view is that the disease is a truly progressive one, and that periods of relief are more in the nature of periods of halting in the onward course of the disease than of any real element of cure. Dr. Weir Mitchell has made the striking statement that the course of the disease is like a passing down a long flight of steps with an occasional landing, these landings corresponding to temporary halts of the disease, which then goes still further downward. This makes periods of temporary improvement, or apparent improvement, only rests in the course. But this case presents a really somewhat different condition from the one generally accepted. There is here not only an arrest of the disease, but a certain improvement. This is seen by comparing his former condition with that of to-day. His sensations, his gait, certain functions, etc., are certainly gaining. The man feels better and is encouraged, another evidence of his general condition. On the whole, I think it is quite worth while to try treatment of this kind, especially with the drug mentioned, particularly in early cases of the disease. The necessity of long use should be impressed upon the patient.

II.

This case is one of a negro boy of fourteen, and I speak of a point or two peculiar to enteric fever in children. The attack began with a chill and the various phenomena attending the beginning of fever. The end of the febrile movement practically came on the twelfth day of the attack, and was as sudden almost as the onset. The patient is now hungry, which is a symptom showing that the attack has really reached the stage of defervescence.

We have here a well-marked case of abortive typhoid fever. This so-called type is not simply one in which the symptoms are mild; but the sudden and abrupt fall, as here noticed, is characteristic of these cases. The onset is as sudden, and almost invariably with a chill, or with decided chilliness, at least. Then comes the short course, followed by the almost critical defervescence. Enteric fever in children is very apt to take this course.

A second case which I bring before you illustrates a point or two in regard to the disease. First is the palmar and plantar discoloration, to which a great deal of diagnostic importance is given by some practitioners. But the main point in the case is a notable departure from the ordinary symptomatology of enteric fever in the complete absence of headache during the entire attack. The patient is now convalescent, and there is no doubt of the genuineness of the attack. It lasted twenty-one days, with a

temperature of 103° to 104° ; the Widal reaction was positive, and Ehrlich's test was also made, with positive result. But the statement is clear that headache, one of the almost invariably common of the symptoms, was not present at any time during the beginning or course of the attack.

III.

I bring before you a man whom you saw one week ago, to show the progress of the case. He is very much better in every way at this time than he was when we discussed his case first. This change I ascribe, in a great degree, to the use of digitalis. Of course, this bettered condition must not all be ascribed to the drug. The patient being in the hospital, with the rest and diet there obtained, has undoubtedly received benefit from it. But over and above what might be expected from this change, there has been a decided improvement in the case.

The patient is a man of thirty-eight, who has been a hard worker in a rolling-mill. He suffered from an attack of rheumatic fever at the age of seventeen, and from typhoid pneumonia at twenty-five. His present trouble is palpitation and dizziness and attacks of coughing when he stoops over. There is some tortuosity of the arteries of the face, the cardiac impulse being diffuse. Auscultation discloses the fact that there is mitral stenosis and regurgitation.

During the past week the man has been taking ten drops of the tincture of digitalis three times a day, with the marked improvement spoken of. We have here an illustration of the salutary effect of digitalis in cases of mitral stenosis. Many physicians fear to give this drug in these cases where the left ventricle is dilated and hypertrophied, on account of the ventricle being jeopardized by a lengthened rest under these circumstances. But I see no real reason for this view. If there were aortic regurgitation, for instance, then we might have the ventricle over-distended by prolonging the period of rest. In mitral stenosis, however, we have not this danger. This chamber is not so important in this condition as is the auricle. And a prolonged period of rest in the ventricle gives the auricle a longer time to empty itself, which means that the ventricle has a greater amount of blood to force out when it contracts. This tends to increase the pressure in the arteries and to lower it on the venous side, which is the result to be desired. The increment of danger added to the ventricle in these cases is so small that it should not be the cause of losing the good effect obtained by the slowing of the heart. In double mitral disease, then, or in mitral stenosis, we think that we are justifiable in giving digitalis in moderate doses, or, in severe cases, in increased doses.

This man will be put on seven drops, three times a day, when he goes home. I should say that, in addition to the digitalis, he has been getting ten grains of potassium iodid and five drops of Fowler's solution three times a day.

ORIGINAL PAPERS.

A NOTE ON CASES OF PHTHISIS WITH PECULIAR CARDIAC PHYSICAL SIGNS.

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UNDER this heading, two cases of great interest, recently reported in *The Lancet*, by Dr. Hale White, on November 19th (Vol. II., p. 1323), and by Mr. W. Southwick Willmore, on Dec. 10, 1898 (Vol. II., p. 1548), had until now escaped my notice.

The physical signs noted were those of great displacement of the heart to the right; yet, at both autopsies the heart was found to be normal and *not* displaced. Both observers seem to accept the inference that the displacement which they had diagnosed must have been apparent only—the cardiac sounds being conveyed by consolidated tissue—though they are at a loss to account for the impulse, which in one case was felt, and in the other was seen, as well as felt, in the right chest; and the conclusion arrived at is that “we must not assume that when the heart's impulse is seen and felt far on to the right side of the chest, the organ is necessarily dragged or pushed over or altered in size.”

As any interpretation of the kind suggested might tend to shake that trust in our clinical methods of diagnosis which it is desirable that we should uphold, it may not even now be too late for this reference to the cases and for an attempt to rid them of their mysterious character, and to reconcile statements which were probably only in appearance contradictory. The clinical observations described are, to my mind, conclusive evidence of the existence during life of a considerable displacement of the heart to the right in both cases; but it is conceivable that this displacement could not be readily demonstrated by the ordinary post-mortem examination.

Cases of the sort described occur from time to time among the large number of those where fibroid excavating disease of the right lung tends to displace the heart more or less. When at the same time the left lung and the heart are fixed by adhesions, the right side of the thorax falls in. If the chest should not fall in, this must be due either to a considerable emphysematous distension of the right middle and lower lobes, or, failing this,

to the encroachment of the heart and of the left lung into the right chest. It is therefore clear that the cardiac displacements which are considerable and *horizontal* belong more specially to a group of cases in which the thorax remains symmetrical, whilst the right lower lobes are not only free from distension, but are often themselves the seat of destructive lesions such as those reported in one of the two cases. Precisely similar cases have come under my own notice.

In 1891, closely adjoining beds were occupied by two patients of mine with destructive lesions in the right lung, in whom the heart was much displaced, the cardiac dullness and impulse occupying in the right chest the position which normally belongs to them in the left. One of these patients, suffering from extensive bronchiectasis of the right lung, in whom Mr. Bennett had resected the right ninth rib, at my request, but had failed to obtain any discharge of pus, was exhibited at the Medical Society of London (cf. *Med. Soc. Trans.*, Vol. XIV., Feb. 16, 1891), under the heading of "Dextrocardia"—a term properly restricted to the exceedingly rare cases in which the heart alone is congenitally transposed to the right, the other viscera not being transposed. Both patients died, and were examined after death. In the first case (P. M. and Case Book, 1891, No. 64), I happened to be prevented from witnessing the beginning of the autopsy, and I was met on my way to the post-mortem room by a report that, whilst the right lung was extensively excavated, the relations of the heart were absolutely normal—a report which, not entertaining any doubt as to the reality of the displacement during life, I received with surprise and not without some reservation as to its retrospective significance. In our P.-M. and Case Book may be seen facing each other two equally trustworthy and accurate records—one describing the heart as it lay in its normal position, the other setting forth the clinical evidences of great displacement of the heart into the right chest. I never ceased to believe that the heart was really displaced before the chest was laid open, and that the displacement might have been demonstrated had the pericardium been opened from the abdomen before opening the chest. The second autopsy, that of the case of bronchiectasis (P.-M. and Case Book, 1892, No. 64), showed the cardiac displacement without any difficulty, thanks to the powerful adhesions, which retained the heart in the position it had occupied during life, and confirmed me in the view which I had taken of the first. Both cases were, practically speaking, identical in their clinical signs, and the pulmonary lesions were closely analogous, viz., considerable destruction of tissue and fibrosis, involving the posterior part of the upper lobe and extending into the inferior lobe almost to the base.

The leading difference was that in one case the right pleuro-pericardial adhesions were continuous with the retracted fibrous tissue of the lung, in the other they were not. If this source of fallacy be borne in mind by the pathologist, he may so conduct the operation as to demonstrate the actual condition. But even should the heart have been allowed to slide back unobserved into the left chest, owing to the admission of air into the pleuræ, it may not be impossible to reconstruct the true pathologic anatomy of the thoracic contents. Thus, in the cases reported by Dr. Hale White and by Dr. W. Southwick Willmore, both of which, as is essential for the production of the fallacy in question, were free from collapse of the right thoracic wall, a considerable proportion of the total capacity of the right half of the thorax, corresponding to the extensive destruction of lung tissue, had to be accounted for. This surplus of space we must assume to have been filled by the heart, since it could not have been occupied by the right lung, owing to the pneumonic condition of the lower lobes in one of the cases and to their diseased and airless condition in the other. I would therefore suggest for both these instances the same explanation which I had adopted at the autopsy on my own, viz., that when the sternum and costal cartilages were removed, the heart must have dropped backward by its own weight, and to the left, owing to the partial subsidence of the overstretched left lung. The heart would then have been seen in apparently natural lateral contact with the right lung; but it might have been demonstrable by reapplying the sternum that the damaged lower right lobes, practically incapable of expanding, could not have completely tenanted the vacated right parasternal region.

Taking, then, the view that these were all instances of mobile hearts, held in the right chest by atmospheric pressure, owing to extensive destruction of the right lung without compensating falling in of the chest wall, it may, perhaps, be suggested to clinicians that skiagraphy might place their diagnosis of displacements of the heart beyond any chance of skepticism, and to pathologists that they might, in investigating cases of this kind, modify their method of section in some suitable manner likely to afford a view of the heart before there had been any possibility of its relations having been disturbed.

Intragastric Nippers. Turck, of Chicago, has devised a small instrument by means of which small pieces of the gastric mucous membrane can be removed for microscopic examination. It consists of pincers, which can be protruded through the end of a stomach tube and closed upon a fragment of tissue.

TYPHILITIS—A MEDICAL STUDY.

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It is necessary to go back in the history of didactic medicine barely ten years to find diseases of that portion of the alimentary tube occupying the southwest portion of the abdomen, classified as typhilitis, perityphilitis and paratyphilitis. By the first was meant a catarrhal inflammation of the colon practically limited to its blind head. By the second was meant a local peritonitis, though the danger of its becoming general was well understood. Unfortunately, the septic and often directly perforative nature of the peritonitis was not known. By paratyphilitis was meant inflammation of interstitial tissue resulting from typhilitis. Practically, paratyphilitis meant an abscess. The appendix was not entirely ignored in this consideration, but, unfortunately, it was not thought to participate in the trouble except in proportion of its size. It is necessary only to repeat the stock quotation, "sausage-shaped tumor," to remind the readers of this paper of the diagnosis of typhilitis, of the narcotic treatment so often employed, and of the anxious watching for the breaking up of the fecal mass, like ice in the spring, or for the less favorable but still hopeful indications that an abscess was forming which could be incised and drained, or for the omen of death, the development of a general peritonitis. Indeed, it is probably true that the great majority of cases of "idiopathic" peritonitis occurring in men and in women, apart from the extension of pelvic inflammation, or of other easily assignable causes, are to be charged to the account of the appendix.

In these days, our attention has been so long concentrated on the appendix, that we have almost forgotten the older nomenclature, while there has been so much surgical discussion of the subject that one scarcely dares hint that a medical disease of the alimentary tract below the iliocecal valve exists, if we exclude dysentery or a colitis so impartial as not to affect the head of the colon especially.

Perhaps it would be well to digress sufficiently to state that the writer not only believes in surgical assistance, but has made it a rule to summon counsel and to urge operation in all but the mildest inflammations of the appendix. Nevertheless, this paper represents the standpoint of the medical clinician. Almost every part of the body, like every normal member of society, has its usefulness. When disease or crime prevents the normal function of such a member, cure or reformation and restoration to function, is the ideal. When the offence against the welfare of the body or of society is particularly malignant, or when the offender shows a disposition to repeat the offence, restoration of function becomes hopeless, and the offending

member must be gotten rid of. Of life imprisonment and death, the latter is safer, since no escape is possible, and it is cheaper. Sentiment and, perhaps, religious doctrine, favor imprisonment. Occasionally, the most carefully pronounced verdict proves to have been an error, and imprisonment affords an opportunity for restitution that the death penalty would have removed. Very similar reasons make it necessary to choose between an expectant treatment while part of the body is being enveloped in fibrous tissue, or recourse to the capital operation of the surgeon. In the case of a calcareous nodule in a once tubercular lung, only the most rampant surgeon, enjoying the novelty of an X-ray apparatus, would choose the more radical alternative. In the majority of septic processes, we wisely call for the services of the surgeon as executioner.

There is at present awaiting the electric chair a man who was found guilty and sentenced, on circumstantial evidence, very largely on account of the unanimous belief that he was a perfectly useless member of society. The same prejudice has existed in the case of the appendix. Beyond the vulgar joke of the undergraduate, only one function has been assigned to the appendix, namely, the lubrication of the fecal mass. It has usually been considered a survival of a retrograde evolutionary process, and, even in the ostrich, in which it seems to be a digestive cavity of some importance, its exact function has never been demonstrated. Whether the appendix has a function or not that can easily be shown by our present superficial physiologic methods, we should hesitate to sacrifice any part of the body, and it must be conceded that the amputation of the appendix threatens the integrity of the dome of the cecum. Moreover, unless we operate on healthy persons, the surgeon must amputate through inflamed tissues, in which bacteria are proliferating and which are liable to rupture from any accidental straining, during or after the operation. Thus, the amputation of the appendix must always be regarded, even more truly than most of the surgeon's work, as the choice of the less of two evils.

In two cases of inflammation involving the right tube or ovary seen during the past summer, the responsibility of advising for or against operation rested with the writer. Save for a difference of half an inch in location, they presented precisely the same indications for operation as if the appendix had been involved. One of the cases, in fact, owing to the rigidity of the abdominal muscles, was thought to be *scolecitis*, both by the writer and by a competent surgeon. The next morning, however, the distinction could be made quite readily. Temperature, pulse and blood were identical in both these cases with what would be considered positive indications for operation in the case of the appendix. As a matter of safety, the writer advised operation, though not as urgently as if the appendix had been involved. In both, medical treatment was adhered to, and a good recovery ensued. Why this distinction between two adjacent peritoneum-covered organs? Simply because a *prosclex* is more apt to rupture than a *pyo-*

salpinx. Why can we not learn to distinguish, in the case of the appendix, the cases in which free internal drainage exists and those in which rupture, by burrowing of pus or gangrene, is liable to occur? In spite of the almost universal denunciation of anyone who expresses the opinion that such a discrimination ought to be made, the writer hopes that increased experience may enable us, even within a few years, to separate cases adapted to medical treatment from those in which operation is necessary. At present we cannot do this. The writer has elsewhere referred to two cases, seen by two surgeons and himself, and operated on in immediate succession. In both the signs were practically the same, and the indications certainly seemed identical to us all. In one case operation barely averted a rupture, in the other a dissection of the appendix showed that it had a broad lumen, that its mucous membrane was normal at the tip, and that the ulceration extended down into the zone of amputation at the junction with the cecum. At the time, and at the present also, it was good policy to subject both cases to operation, but it is not good policy to hold that such an indiscriminating course is to be the best attainment of the future. The experience of gynecologists, in several conditions in which it was formerly thought that the only alternative was operation or death, teaches us differently.

It would be a dangerous sophistry to attempt to prove the medical side of such a controversy by quoting the results of exceptional cases in which patients who ought to have died have recovered after obstinately refusing the best advice of the surgeon. On the other hand, neither all reports nor all specimens used by surgeons as arguments are as convincing as they should be, and the specimens, particularly, have sometimes borne out the impression that operations have been performed for very trivial affections of the appendix, while the essential trouble was with the cecum.

The existence of colitis is well established and not disputed. The existence of typhlitis, that is, of a localized colitis, was considered equally well established a few years ago, but now it is implicitly claimed that no such process exists, and that the whole trouble with the bowel of this region is centralized in the appendix. Let us first examine the subject *a priori*. The cecum and ascending portion of the colon form a rather immovable and nearly upright stand-pipe, into which the nearly liquid contents of the ilium are poured, and from which quite consistent feces pass, on account of the abstraction of water. Both because of the relative immobility, the length of the perpendicular column and the size of the tube, there is no part of the alimentary canal through which the passage is more difficult, excepting the various sphincters. In an article on iron in the *Therapeutic Gazette*, attention has been called to some German researches that show that most of the waste iron is eliminated through the colon; it is highly probable that other waste products are also extruded at this place. The bacterial flora of the intestine is known to be particularly rich and particularly prone to virulence in the colon. In fact, the bacillus coli communis is almost always the

germ that does mischief in the body, excepting those which are distinctly foreign. The stomach is protected from its contents by an antiseptic juice, the small intestine by an abundant, protective, alkaline secretion, and by the fact that irritating and putrescible fragments rarely get between the valvulæ, but are shouldered onward rapidly. In the cecum, not only is the absorptive current greater than the secretory, but the wall of the bowel is smooth. Thus, the ingestion of improper food, or other cause of increase of bacterial activity, such as intestinal torpor, traumatism, or even "taking cold," is much more apt to produce inflammation of the cecum than of any other part of the intestine. Unfortunately, an essential catarrh of this region is always attended with the threat of bacterial colonization. So long as the process remains merely catarrhal, the appendix probably co-operates only as the tonsil or uvula would in a catarrhal pharyngitis. Like the tonsil, but to a greater degree, the appendix affords a nidus for bacteria; its resistance is less than that of more active parts of the body, it often has a congenitally deficient blood supply, and it is liable to deflections or calculus plugging—rarely plugging with foreign bodies—that prevents the outflow of septic products.

Some writers have already pointed out that what used to be called intestinal colic was probably identical with what is now classed as "appendicitis." The very vivid word-picture that Prof. H. C. Wood used to portray to demonstrate the need of clearing out the bowels before colic had developed into peritonitis, undoubtedly points to the same relation. Not to mention cases of temporary "colic" of the intestine, which run their course in a night or in a day or two, the following instance may be cited to illustrate the medical treatment of what, at first consideration, seemed to be a case of scolecitis demanding surgical treatment:

W., a young professional man, first consulted the writer in the spring of 1897 on account of dyspepsia. The stomach was large and the greater curvature was somewhat low. There was no ptosis nor suspicion of organic obstruction at the pylorus. At the time, no trouble was found with the appendix. Some time later, he had a severe nocturnal attack of diarrhea and vomiting, for which he was treated medically by a surgeon. A good recovery ensued, except that there was some debility and the bowels inclined to be constipated, with occasional attacks of diarrhea. There was slight discomfort, rather than pain, in the right iliac region. Palpation later in the year revealed a slightly enlarged though not very tender appendix having nearly a north and south direction. The patient was advised to submit to operation, but he hesitated on account of certain engagements. With the idea of keeping the bowel as aseptic as possible, and with the faint hope of securing absorption of exudate, powders of salacetol and iodol were administered. Considerable subjective improvement was reported, but the opportunity was not furnished of making a careful examination. Some months later, a recurrence of symptoms led to a repetition of this course of treat-

ment, and, after the subsidence of the symptoms, a careful palpation was made with the patient in the warm bath. Although the relaxation thus secured was ideal, the stomach being palpable, the appendix could scarcely be felt at all, and certainly presented no evident abnormality. For about six months the patient has been in perfect health.

On Sept. 8, 1898, Mrs. D., aged twenty-seven, complained of irritability of the bladder and of slight fever; the bowels were constipated and there was backache. The indican test was present in the urine, but there was no other qualitative abnormality. The next day, however, both albumin and albumose were present, as well as the heaviest coloration with urorosein (verified by Dr. J. Bergen Ogden, of the Harvard Medical School) that the writer has ever seen. There were microscopic evidences of cystitis which cleared up in a day or two, leaving a fairly typical clinical picture of typhoid. The Ehrlich test in the tube gave a color reaction indistinguishable (by the writer) from that of typhoid. As it is commonly stated that the tint is that given by carbolic urine, the writer has formed the habit of making a contrast between suspected urine and the same with carbolic acid added. In this case not the slightest difference of color could be detected. Unfortunately, the dish tests were not employed. The serum test was tried at the Board of Health laboratory, twice, without result. Although Dr. Bissell reported that he would not exclude typhoid, the writer would consider the diagnosis very doubtful. The patient defervesced and became convalescent in nine days. This fact might seem contrary to the diagnosis of typhoid, but as the treatment was antiseptic and absorptive (a modification of Bouchard's method) and as this method usually leads to very rapid recovery, say within three weeks for a moderately severe case of typical typhoid, this point may be considered negative. The absence of leucocytosis and of malarial parasites led to a rather positive diagnosis of typhoid before the report of the serum test was known. Some spots that were considered fairly typical were also noted. For our present purposes, the question as to whether this fever was typhoid, or not, is not of importance. The patient remained well till November 22d, when the temperature again rose. The urine presented evidence of subacute nephritis of tubular type—albumin and a few granular epithelial casts by centrifuge. Indican was also present, the bowels had not moved for three days, and there was a cecal tumor. The appendix was not palpable, nor was there definitely localized tenderness. The blood again showed absence of leucocytes, and, on this account, though the temperature was 103.7 and the pulse 141, operation was not considered necessary. The bowels were freely moved with calomel and injections; no food was given for twenty-four hours, then only milk; water was ordered in large amounts, and salacetol and charcoal were given every three hours. In two days the temperature and pulse had declined below the danger point—if there is any such thing—and the local indications in the region of the cecum had disappeared. Indican had also disappeared from the urine,

except for the normal trace. By November 27th the patient was practically well. Whatever the nature of the first attack, the second was undoubtedly a typhlitis, in the old-fashioned sense.

The writer has seen several instances of intoxication from food, which illustrate the fact that there is a gradation from slight intestinal fermentation, through typic botulismus to a genuine inflammation of the bowel, especially of the cecum, and even to a scolecitis demanding operation. In fact, the writer's experience with the latter class of cases leads to the opinion that, whatever associated causes there may be, the essential cause of scolecitis is the development of a heightened virulence of the bacterium coli commune by various factors favoring putrefaction in the bowel.

Mrs. W., seen in consultation with Dr. C. E. Congdon, had eaten bologna sausage several days previously. Five of the family had had diarrhea and other comparatively mild signs of poisoning, but this patient had remained in a state of profound depression, the heart being very weak, though free from murmurs. Free purgation having been secured, there was no cecal tumor, but there was tenderness over the entire colon, and the passages had contained much mucus. In another case, following upon a hearty meal chiefly of canned lobster, the patient had been inclined to constipation for several days, so that a cecal dam had been formed, and here there was both localized tenderness and tumor. The appendix, after moving the bowels, could be felt while the patient was in the hot bath, and it was somewhat tender, but the absence of high fever and pulse and of leucocytosis indicated that whatever scolecitis existed was merely part of the typhlitis. Mucus shreds were passed for several days, particularly after thorough rectal enemas, calling attention to what ought to be self-evident, that while a fecal tumor is indicative of typhlitis, and while the fecal mass is a determining cause of typhlitis, it is not the disease, and the typhlitis exists just as truly after the bowels have moved as before, though the conditions are now more favorable for relief. Let us assume a slight variation in the clinical history. Suppose that the patient, instead of admitting constipation, insists that the bowels have been moving with perfect regularity—as is often literally true, in spite of the gradual accumulation of scybalous masses in the colon and of a large amount of fecal matter in the cecum—and suppose that, instead of being able to incriminate some article of diet, some food has been taken which has been on the point of putrefying, but without giving warning by taste or smell, there would then be a typic illustration of a rather mild type of "appendicitis," for which the surgeon operates early, in which he, naturally enough, finds the tissues favorable for amputation, and in which the patient almost always makes a speedy recovery. Contrasting these cases with those in which the appendix is really diseased, in which operation is urgently demanded, but in which the chances for successful amputation and ultimate recovery are not so good, is it any wonder that the surgeon clamors for early diagnosis, for the privilege of operating on the

very cases that do not need his services, and that he is tempted to refuse operation at the time and in the case when surgery is most needed, because of the necessarily bad prognosis? No surgeon would think of using the same argument with regard to the amputation of a leg. In fact, the present outlook is that, with the exception of gangrene and malignant disease, the amputation of the future will be restricted to cases that a few years ago were considered beyond even the hope of this operation. Of course, it must be admitted that the crippling after the amputation of an appendix is not conspicuous, that the operation in itself has a low mortality, that the scar is not very disfiguring, and that the liability to hernia, though deserving consideration, is not great, but the general rule must be respected that no part of the body shall be removed unless its presence is a menace to other parts.

The problem that confronts the physician to-day is, How can the differential diagnosis be made between what is essentially septic or destructive scolecitis and what is essentially merely a slight concomitant of a typhlitis? Pathologically, no sharp line can be drawn, as bacteria are always present, and as the vulnerability of the appendix and its penetrability by bacteria or by a necrotic process are unknown factors in any particular case. Clinically, however, we must not be satisfied till we can group these cases into three categories: those which are, for all practical purposes, catarrhal typhlitis and which require medical treatment; those which are plainly septic and which demand operation immediately, if possible; those which are doubtful and which should be operated upon as a matter of life-insurance. A history of coprostasis, especially of insufficient passages with retention of part of the fecal mass, favors the diagnosis of typhlitis, as does any obvious increase of irritation of this part of the bowel. On the other hand, the fact that retained or especially poisonous intestinal contents favor the development of a typhlitis, does not insure the absence of a genuine septic-scolecitis, though the latter is more apt to develop from more gradual and less conspicuous causes of the same kind. Indicanuria, likewise, occurs in both cases. If promptly relieved by clearing the intestine, it points to a removal of the cause. Cecal tumor indicates typhlitis, but the typhlitis persists after its passage from the head of the colon, and typhlitis does not, of itself, warrant the exclusion of a marked scolecitis, any more than the diagnosis of gastric catarrh allows us to exclude cancer of the pylorus. Pain, tenderness and muscular rigidity point to rather serious involvement of the appendix, and the special indications of peritonitis must be borne in mind. But considerable griping, diffused or wandering pain, may attend the passage of an irritating mass through the bowel, and the sudden cessation of pain or the absence of pain when other signs point to severe inflammation, is suggestive of tissue necrosis or vital depression. In perhaps the majority of cases, the appendix may be palpated, or else it can be positively made out that it is not enlarged. In the hot bath it is possible

to palpate most normal appendices, and the physician who is unaccustomed to this method should make allowance, just as if he were to use a magnifying power greater than usual. It is an unfavorable sign if there is so much board-like rigidity of the muscles of the right side of the abdomen that careful palpation is impossible. But as in one of the cases cited, just this condition may cover up a tubal or ovarian inflammation which has a better chance for recovery without operation than a similarly diseased appendix. With a fecal tumor, and in the absence of muscular rigidity, including the ability to lie comfortably with the right leg outstretched, the probability is in favor of typhlitis and against scolecitis. Temperature has been so thoroughly discussed that everyone is familiar with the subject and with the numerous exceptions which render a high fever compatible with a moderately severe condition and a low temperature with a very serious lesion. As in the case of puerperal fever, it has been announced that a high pulse is more serious than a high temperature. It should be recognized as a sign of sepsis in general that a low temperature and rapid, thready pulse, usually means that the system is thoroughly poisoned, whether the source of sepsis be in the pelvis, the uterus, the appendix, or anywhere else. On the other hand, there are plenty of other conditions that may increase the pulse rate without increasing the danger, or which may inhibit it without making the prognosis good. Regarding pulse, respiration, temperature, pain, etc., the diagnostician should be on the lookout, not so much for arbitrary peculiarities of one or the other, but for inconsistencies in their joint testimony. Leucocytosis is a sign of the greatest value, but it, too, must be used without any idea of pathognomonic infallibility. If, for instance, at the beginning of a disturbance in the region of the cecum, the leucocytes are normal, the omen is favorable. If, on the other hand, there is evidence of great prostration, a normal number of leucocytes means not that the body is not assailed with septic enemies, but that there is no reserve to be called forth against them. In short, the diagnosis should be made on the clinical picture as a whole rather than on any one feature. For the present, we must be exceedingly conservative in regard to denying our patients radical treatment, but, with future experience, we may reasonably hope to know, not only when to call the surgeon and when to rely on medical treatment, but to dictate the terms on which the surgeon shall act.

It will be noted that the writer has practically ignored the older terms, perityphlitis and paratyphlitis. The corresponding conditions certainly exist, but only because there has been some flaw in the diagnosis and treatment. The practical side of perityphlitis is septic poisoning, or the formation of adhesions. The practical side of paratyphlitis is an abscess. Operation should anticipate these occurrences. Theoretically, at least, this statement involves both a medical and a surgical criticism. The physician should not allow the case to pass beyond the point at which these complications may be prevented. The surgeon should remember that amputation of the

appendix, "under favorable local circumstances," is not treatment, but prophylaxis. It should be remembered that operation as a means of treatment involves, necessarily, the removal of a diseased appendix. Thus the plan of waiting for an abscess to form can be justified only by the practical conditions of a particular case, and the plan of either operating very early or very late is really a relegation of the treatment to medical means, for, at either extreme, the surgeon can claim to have acted only as a prophylactic. Only special circumstances, too, can justify the plan of waiting for the development of a clean-cut abscess, for while demarcation is taking place, the patient may be dying of septic poisoning, as in a case of the writer's, in which one surgeon advised immediate operation and another delay. In this case, the writer took the false position that the surgeons should decide the time of operating. Unless there is great disparity in experience of medical attendant and of surgeon, the latter should be called, not to say whether operation is advisable or not, nor to set a time for operation, but to carry out the plan of the physician. When it comes to the evacuation of a paratyphlitic abscess, opinions differ as to the advisability of removing the appendix. It is highly probable that any perforation must have been located in the appendix, not in the cecum; hence, if operation must be done, it is advisable to remove the appendix and thus to prevent a second crime against the safety of the body. Of course, it may not be best to amputate in a pool of pus, but, in such cases, the appendix should be removed before the wound is finally allowed to heal—unless very special contraindications exist.

CHRONIC PLUMBISM FROM DRINKING-WATER.¹

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(*Concluded.*)

LEAD POISONING FROM CROTON WATER.

CASES 58-61 inclusive.—The following four cases have occurred in the persons of three physicians and one medical student, the student having boarded with one of the physicians; the rest lived apart. In one of these the blue line on the gums was entirely absent, in another it was indistinct, while in the other two they were distinctly visible. They all suffered from colic, constipation, pain and numbness in the limbs, loss of power, etc. These cases are exceedingly interesting for the singular fact that they have occurred in professional men, practitioners, who could not ascribe their own symptoms to the true cause, and, therefore, could not assign the proper treatment for themselves. Moreover,

¹ A portion of a thesis entitled: "The Quantity of Lead in Drinking Water that May Prove Injurious to Man, and Improvements on the Separation of Lead from Urine by Electrolysis."

one of the men could not have been persuaded that he was suffering from lead poisoning, although the blue line was perfectly distinct on his gums; he therefore adopted the use of the water again and very soon had a return of the original symptoms. After this he has learned better and entirely abandoned the use of the water, and since then he is perfectly healthy. Further interest in these cases is furnished by the fact that professional men of high standing have been in attendance, such as Drs. Metcalf, Van Buren, Mott and others, none of whom even thought of looking into the patients' mouths and examining their gums. They allowed the disease to take its course, in one case or two, for nearly two years, until the patients were reduced to almost invalids, when the true nature of the disease was finally discovered. These patients, like many others who suffer from lead poisoning, when they have left their homes for some short time, and gone into the country, have returned perfectly healthy, but in a week or two afterwards, from the use of the deleterious water, the symptoms have again returned. After entirely abandoning the use of the water (Croton) they have returned to normal health. More particulars of these cases are furnished by Dr. Geo. H. Kingsbury.²

CASE 62.—This case occurred in New York City about the year 1871. The poisoning was traced to the use of Croton water, drawn through the hot-water pipes (lead) after standing in them all night. This water was only used in preparing the morning meals.³

LEAD POISONING FROM COCHITUATE WATER.

The following cases (Nos. 63-69) have occurred in Boston, in different parts of the city, and were traced to the drinking-water supplied from Lake Cochituate. In each case the houses were supplied with lead pipes. The specimens for examination were taken after the water had been allowed to run from two to five minutes.

CASES 63 and 64.—Out of a family of three, two, the father and son, were affected.⁴ They had severe and frequent colic, anemia, debility, etc. Their urine was found to contain a considerable amount of lead. This family lived on Bennett street. Their drinking water was examined by Dr. E. M. Greene, as well as by Prof. E. S. Wood, both of whom found nearly one grain of lead to the gallon.

CASES 65, 66 and 67.—A mother and two daughters have been affected with cramps in their muscles, particularly in the calves, numbness in their fingers and arms. The oldest daughter had severe attacks of colic, constipation, etc. The urine of the mother and youngest daughter was examined and was found to contain much lead. This family lived on Hancock street; their drinking-water was examined and was also found to contain lead.⁵

CASES 68 and 69.—Another family of a mother and two daughters, the latter two only being affected. They had frequent colic, anemia, constipation, and a blue line on the gums. They lived on Ash street. Their drinking-water was found to contain a considerable amount of lead.⁶

² *N. Y. Jour. of Med.*, May, 1851.

³ Report of State Board of Health of Mass., 1871, 41.

⁴ *Boston Med. and Surg. Jour.*, Nov., 1889.

⁵ *Ibid.*

⁶ *Ibid.*

MISCELLANEOUS CASES.

CASE 70.—Dr. Treadwell, of Salem, was suffering from the effects of the water he drank, which was contaminated with lead. The amount of lead in the water was quite large.⁷

CASES 71 and 72.—Two members of a family of seven were made seriously ill by the use of the drinking-water, containing only, at times, a mere trace of lead—a quantity so infinitely small as not to have the least effect upon the health of the others.⁸

CASE 73.—Mary Ann D——, aged fifty-seven, residing at Huxly-heath, Kent. She had a severe attack of colic, lost the power of both hands shortly afterwards, and felt very weak. There was a well-marked blue line on the gums.⁹

CASE 75.—J. S., a cook in the kitchen of the Souterrain railroad station. Lead pipes were in use for the supply of water to this kitchen. The patient presented well-marked symptoms of chronic lead poisoning, *i.e.*, colic, blue line on the gums and icterus.¹⁰

CASE 76.—The following case presents as the symptoms, colic, arthralgia and paralysis. Jaundice also was an early symptom; it occurred when the patient suffered from arthralgic and neuralgic pains. The paralysis occurred in the abdominal muscles, so that the patient could make no effort to expel the contents of his bowels. This case occurred in the person of a distinguished scholar and divine, Rev. Dr. Lamson, of Dedham, Mass. Dr. Stimson, a distinguished physician in Dedham, was in charge of the case, and he informs us that in 1836 water was brought to the village from a spring upwards of half a mile distant, through lead pipes, and distributed from them, through small servicepipes of the same material, to most of the houses of the place. Rev. Dr. Lamson was the first person who became diseased from drinking the water. His case was one of the most interesting that occurred, was very insidious, and for a long time baffled the skill of other physicians besides Dr. Stimson. The cause of his severe illness was finally detected by accident. The attention of the physician was attracted, by the patient's wife, to the sweetish taste of their water. She brought in a pitcherful that had stood over night, and the physician observed on its surface a scum of leaden color, and that it had a decidedly sweetish taste. Dr. Stimson then sent some of the water to Prof. Webster, of Cambridge, for analysis. He found the water decidedly impregnated with lead. A quantity of the water was afterwards sent to Dr. Hayes for analysis, and with the same result.¹¹

CASE 77.—A colored female domestic, in the house of Dr. Lamson,¹² became diseased, and presented symptoms similar to his, but of less severity.

She used the same water for eighteen months before she was taken sick. Her symptoms were arthralgic and neuralgic pains about the trunk and extremities, impaired appetite, loss of flesh, a peculiarly anxious and distressed countenance, and constipation. After she left she soon began to mend, and in a few weeks regained her usual health.

⁷ Dr. J. R. Nichols, *Boston Med. and Surg. Jour.*, Sept., 1860.

⁸ *Ibid.*

⁹ *London Lancet*, Jan. 21, 1860.

¹⁰ Schmidt's *Jarbucher*, 1869, 279.

¹¹ For further particulars, vide *Trans. Amer. Med. Assoc.*, Vol. V., 187.

¹² *Ibid.*

CASE 78.—Miss Mayhew, aged fourteen. The symptoms she presented were those of arthralgia and paralysis, besides minor symptoms. The pain and emaciation were most extreme; the physiognomy peculiarly marked. Lead in the drinking-water was found to have been the cause. Recovery followed the discontinuation of the use of the water.¹³

CASE 79.—Lead paralysis with encephalopathy.¹⁴ J. Guild, aged fifty-four, a resident of Dedham, Mass., engaged in mercantile pursuits, of rather feeble constitution. Early in March, 1848, he began to feel ill, felt tired, walked feebly, the pulse was feeble, appetite failing and flesh declining, symptoms to which the physician (Dr. Stimson) could not ascribe a cause. A few days later strabismus occurred, one eye turned toward the nose and he could not roll it outward; the external muscle of the eye was paralyzed. Later he took a journey to the Sulphur Springs in New York, but stayed away only a short time. Soon after his return he complained of numbness in his fingers, increasing rapidly to a marked degree, so that he could not button his clothes; soon after this paralysis of the extensor muscles of the arm set in. The countenance began to assume the expression peculiar to those who suffer from lead disease. Dr. Stimson now began to suspect lead as the cause of all the trouble. On investigation he found that the water the patient drank was derived from a well through lead pipes. Two bottles of the water, one from the pump, the other from the well outside of the leaden pipe, were sent to Dr. Hayes, a distinguished chemist in Boston, for analysis. Lead was found in both bottles. The pipe had been in the well about five or six years, and no one else in the family suffered from the use of the water. Notwithstanding the appropriate treatment his condition grew worse. The paralysis increased in the extensor muscles of both upper extremities; this was so severe that he could neither dress nor feed himself. Soon afterwards one of the lower limbs became affected, and he could not walk without assistance. The debility, emaciation and tremor increased; the complexion, a pale dirty white, and the physiognomy peculiarly marked. His spirits became greatly depressed, bowels constipated, but readily moved by medicines, pulse feeble. He continued with little alteration till early in October, when encephalopathy supervened; he became delirious during the night, talked incoherently; countenance wild and staring. This condition lasted ten or twelve days; at times would talk rationally, and answer questions correctly, then wander and be quite insane. After the affection of the brain terminated his general appearance was much as it had been previously, only more debilitated.

He continued from this time gradually to sink, and became very much emaciated before his death, which took place Jan. 2, 1849.

CASE 80.—Dr. Stimson himself, at a subsequent period, became affected with a severe attack of arthralgia in his lower extremities, from using water drawn from a well through lead pipes. After removing the cause the disease subsided.¹⁵

CASE 81.—Dr. Stimson's wife was affected, from the same cause, with paralysis in the lower extremities, which prevented her from walking; she could not rise from her chair without taking hold of something to pull herself up. After removing the cause she gradually recovered the use of her limbs.¹⁶

¹³ *Trans. Amer. Med. Assoc.*, Vol. V., p. 193.

¹⁴ *Ibid.*, p. 195.

¹⁵ *Trans. Amer. Med. Assoc.*, 1852, p. 197.

¹⁶ *Ibid.*

CASE 82.—George Clark,¹⁷ commenced to use water transmitted through lead pipes in September, 1850. He was taken with colica pictonum on April 3, 1851, and after a severe illness of three weeks convalescence commenced. Lancing pain in the bowels and delirium were very common. He was very restless and manifested great concern for his affairs. Under treatment the symptoms abated. In the following September he had another attack, and died under the care of a homeopathic physician.

CASE 83.—Mr. Thackray, aged sixty-three. His upper extremities completely paralyzed and his lower extremities partially so. He could not raise himself from the chair nor walk without assistance. His voice was altered, the bowels constipated. The drinking-water was examined and found to contain lead.¹⁸

CASE 84.—Mrs. Thackray,¹⁹ wife of the above patient, suffered from a long period of illness, and had, about twelve months previous to her death, become similarly paralytic. The servants in the same house also suffered from colic.

CASE 85.—A man, aged forty. Had pains in the limbs and chest, constipation, some dyspeptic symptoms and a blue line on the gums. The water he used for drinking purposes was found to contain lead. He was ill for a very long period, but completely recovered after leaving off the use of the water.²⁰

The following, including Cases 86-93, is reported by Dr. J. T. Garrison, of Swedesboro, N. J.²¹ In the autumn of 1847 Mr. C. laid a train of one-inch lead pipe from his residence to a spring about a mile distant, for the purpose of conveying the water from it to his house and barns. When the spring was very low, as sometimes happened in warm weather, the pipes were but partially filled by the current, room being thus left for the entrance of air. No other water was used by anyone in the family. During the month of May, 1847, several members of the family began to complain of feeling uneasiness in the abdomen, with pains over the body generally, accompanied by constipation in some, and by tenesmus and bloody stools in others.

CASE 86.—Mr. C. was especially affected, and became gradually worse, suffering with violent colic and unrelenting constipation. The pain, which was located near the umbilicus, was most excruciating, it never left him, and seldom even remitted decidedly. There was a strong retraction of the integuments of the abdomen toward the spine, and a hard, knotty feeling of the muscles in various places over its surface. The pulse became rapid, the skin hot, his countenance anxious, the tongue furred, and his gums presented a well-marked blue line. The stomach was also disordered, and nausea and vomiting were common. After removing the cause, and the administration of purgatives, he gradually began to recover, and on the tenth day was decidedly convalescing.

CASES 87-93 inclusive.—Mrs. C. and six others of the same family have also suffered in a similar manner, though not so severely, and, on examination, their gums were found to be distinctly marked with a blue line along their edges. By

¹⁷ *Trans. Amer. Med. Assoc.*, 1852, p. 197.

¹⁸ J. B. Harrison, *On Contamination of Water by Lead*, London, 1852, p. 73.

¹⁹ *Ibid.*

²⁰ Harrison, *On Contamination*, etc., p. 74.

²¹ *Trans. Amer. Med. Assoc.*, Vol. V.

suspending the use of the water, with some slight medication, they were soon made quite well.

CASES 94, 95.—Mr. and Mrs. G., aged fifty-six and fifty-four years respectively. Both were well-defined cases of arthralgia, accompanied by slight paralysis of the muscles of the extremities. Numbness of the hands and arms, weak and painful joints, particularly the knee-joint, troublesome dreams, great depression and general restlessness were among other symptoms. The cause of this illness was traced to their drinking-water, which was drawn through lead pipes. An analysis revealed a trace of lead in solution. After discontinuing the use of the water they gradually recovered.²²

CASE 96.—E. M. Read, of Lowell, Mass., a mason, aged thirty-five, in enjoyment of perfect health, removed to a residence on Gorham street, Chapel Hill, in 1836. (Previous to this he and his family were supplied with water through a wooden pump.) His health remained good until the early part of 1839, when he began to have attacks of colic, with constipation, his skin assuming a yellowish color. He had pains in the lower limbs, with a sense of weakness, stiffness and numbness. The colic became almost of daily occurrence. Eructations, loss of appetite, with all the variety of dyspeptic symptoms, also occurred. His spirits became depressed, and he became very nervous. These symptoms, which came on very insidiously, in the course of a few months were much aggravated, and from their frequent return, after partially yielding to active cathartics, alteratives, bitters, etc., became alarming. The treatment, which relieved in the early stages, failed to be of any benefit as the case advanced. Practitioner after practitioner was consulted with equally unsatisfactory results. The costiveness became constant, cathartics only contributed to aggravate his sufferings, and he suffered from a sense of stricture, as if a cord was drawn permanently tight around his body at the navel. At this juncture he consulted Dr. James Jackson, and remained a week under his care, in Boston. By him leeches were applied twice freely to his abdomen, with immediate but transient relief; in a few days the pains, etc., returned and leeches were ineffectually repeated. Dr. Jackson advised a strict diet, such as would produce a soluble state of the bowels. This was strictly followed, but without success. No inquiry or reference, up to this time, was made by anyone as to the true cause of the difficulty. About this time similar cases occurred in the same neighborhood. The result was a suspicion as to the true cause, which was at once confirmed by a chemical examination of the water in the wells, which was found to be supplied to all families in that portion of the city through lead pipes, in some cases several hundred feet in length. No time was lost in substituting other material for lead in supplying water to the family of Mr. Read, which example was soon followed in the case of other sufferers. From this time Mr. Read's symptoms began to mitigate, and he gradually regained his health.²³

CASES 97, 98.—Mrs. and Miss Read²⁴ became affected about five or six months previous to the illness of Mr. Read. The former suffered from frequent attacks of colic, pain in the limbs, nausea, vomiting, numbness and stiffness in the lower extremities—the latter from spinal irritation, dyspepsia and convulsions. After the removal of the lead pipes they have recovered perfect health.

²² For further details, vide *Trans. Amer. Med. Assoc.*, Vol. V., p. 200.

²³ Dr. Dalton, *Trans. Amer. Med. Assoc.*, Vol. V., p. 201.

²⁴ *Ibid.*

CASE 99.—A railway engineer, who had been in the habit of drinking water from the spouts of lead-lined tanks, used for replenishing the engine boilers.

He had colic for five days, with bad constipation, pain in the trunk and limbs, and a peculiar aching in the hands and arms. He lost the strength of one arm so that it became nearly useless. During two days he had tremor and delirium. Under medical care, he recovered from all his symptoms, but had a recurrence of them. Many of his fellow laborers on the railway, who drank from the same tanks, had complained somewhat.²⁵

CASE 100.—A young man of Chelsea²⁶ who, having for some time been subject to abdominal pain and costiveness, was, from four to six weeks later, attacked with severe pain in the region of the navel. His pulse was between 50 and 60, the countenance sallow, and the characteristic line on the gums was marked. These symptoms led to the suspicion of lead poisoning. Upon inquiry it was learned that a short time previous to this attack a lead pipe, through which was drawn, from a well, the water which he was in the habit of using, had been greatly corroded, and a new one was substituted for it. This latter pipe was then changed for a gutta-percha tube, and the patient soon made a complete recovery. Other members of the family, and previous occupants of the house, had been subject to abdominal pains.

CASES 101, 102.—Two children²⁷ of a family were attacked with lead colic, the blue lines were well marked on their gums. In one of them, wrist drop occurred in a few days. The water used by the family was examined and found to contain a large quantity of lead. All the members of the family were soon affected, and upon the gums of all of them the blue lines could be seen. Some had colic, others wrist drop, and there has been more of an effect upon the mind than is usually observed. One of them became semi-idiotic.

CASE 103.—Dr. Putnam reports a case from the Massachusetts General Hospital. The only possible source of lead, which was the cause of his illness, was the drinking-water, which, however, has been used by many others with impunity. Analysis has shown that this, as well as the patient's urine, contained lead, although in small amount.²⁸

CASE 104.—A. B., aged fifty-four, of Taunton, Mass.²⁹ The patient has noticed numbness in his hands, and, afterwards, in the left foot, which has gradually extended up the leg and back. He had some constipation, nausea, etc., and a peculiar staggering gait of gradual onset and progressive character. The urine was tested by Mr. Thomas Farmer for arsenic, but the results were negative. The patient was then put on five-grain doses of iodid of potassium, and the urine analyzed for lead by the same chemist, who reported that it contained a very large quantity of lead. The only possible source discovered was a tin-lined copper kettle in which the hot water, which he had been in the habit of using freely, was heated. The kettle was then examined by a chemist, Mr. George F. Chase, Superintendent of the Taunton Water Works. The lining was nearly gone, nevertheless he obtained traces of lead from the water which he kept boiling in the kettle. Four months after the discovery of the source of lead, and the commencement of appropriate treatment, the patient was helpless

²⁵ *Boston Med. and Surg. Jour.*, Feb. 7, 1856.

²⁶ *Ibid.*, Dec. 25, 1856.

²⁷ Dr. Bowditch, *Boston Med. and Surg. Jour.*, Sept. 2, 1858.

²⁸ *Boston Med. and Surg. Jour.*, Vol. XCIV., p. 41.

²⁹ *Ibid.*, Oct. 30, 1890.

and death ensued. In this case ataxia, although rarely caused by lead, was a prominent symptom.

CASE 115.—J. S. Green, of Waltham, Mass., a graduate of the Boston Medical School, however not a practitioner, has been suffering with paralysis of his lower extremities for a considerable length of time. Dr. Horatio Adams, his attending physician, after learning that his drinking-water came through 140 feet of lead pipe, attributed the paralysis and all his other ailments to lead poisoning from the drinking-water. The water was afterwards examined and found to contain a large amount of lead. Further details are furnished by the patient himself.³⁰

CASE 124.—This patient³¹ has been repeatedly under treatment for dyspepsia and occasional impairment of the senses. Her recovery was always protracted, and at no time satisfactory, until after a certain time she spent in the country. Later she experienced a recurrence of those symptoms in an aggravated form, with the addition of loss of sensation and impaired motion of the right hand, leg and foot. On this occasion the real cause of her trouble was, for the first time, suspected by her attending physician. The water she had constantly used, for the past four or five years, was found to contain lead.

CASES 105, 106, 107, 108, 109-112, 113, 114, 119, 120-123.³²—All are well-ascertained cases of lead poisoning, presenting most pronounced symptoms of colic, some arthralgia, and others paralysis, the cause being directly traced to lead in the drinking-water. All, except Cases 105 and 106, have recovered after the removal of the cause; these two died.

CASES 125 and 126.—Father and daughter both were affected with colic.³³ Her chief symptoms were anemia, epigastric pain, vomiting, headache and jaundice, for which the three physicians who attended her could assign no cause. Later she had wrist drop. The father suffered greatly from the colic and constipation, and on his gums the blue line was distinctly marked. This led the attending physicians to suspect poisoning by lead, and on investigation it was found that the water, which the family used for culinary and drinking purposes, was brought from a well through a lead pipe 50 feet in length. On removal of the cause with appropriate treatment both completely recovered.

CASES 135, 136 and 137.—Mr. H., aged fifty-seven years, had always enjoyed good health until the spring of 1869. Early in May he found himself losing health and strength, tormented continually with pain and a constriction in the abdomen. In June next he had an attack of colic, which afterwards often re-occurred. He also had obstinate constipation and nausea for many days. The abdomen was considerably and uniformly depressed, and the blue line on the gums was distinct. Mrs. H., of good health and a strong constitution, had similar symptoms to those of Mr. H. Their son-in-law, Mr. E., however, was more severely afflicted, being extremely emaciated and feeble. It was found that the water they drank was brought from a well, through a lead pipe about 40 feet in length. The surface of the pipe, inside and outside, was coated with carbonate of lead, and in several places it was deeply corroded. The water was analyzed by the professor of chemistry at the Agricultural College, Amherst, and reported by him to contain lead and an unusual amount of carbonic acid.

³⁰ *Trans. Amer. Med. Assoc.*, Vol. V., p. 212-218.

³¹ *Manchester Guardian* (England), April 24, 1852.

³² *Trans. Amer. Med. Assoc.*, Vol. V.

³³ Report of State Board of Health of Mass., 1871, 23.

The carbonic acid was furnished by a wooden cover which had decayed and fallen into the well. After the cause was removed they all recovered.³⁴

CASES 138 and 139.—A lady and her niece, both living at Buchauness Lodge, a cottage residence of the Earl of Aberdeen. They had several of the minor ailments of chronic lead poisoning, *i.e.*, vomiting, constipation, pain in the limbs and stomach, etc. The drinking-water was found to present a white incrustation after standing for some short time, and it was found, by several tests, to contain lead. These patients used the water but eight months.³⁵

CASES 127, 128, 129, 130, 131, 132, 133 and 134.—All are positive cases of lead poisoning, traced in some by chemical analysis to the drinking-water as the cause. Most all have had paralysis and wrist drop, terminating in recovery after the removal of the cause with the exception, however, of three; these have been permanently injured.³⁶

CASES 140-144 inclusive.—Mr. T. Van La H., an eminent pianist of New Orleans, his wife and three daughters, were all taken about the same time with cramps in the stomach, bowels and extremities. Prof. James Jones, of New Orleans University, was called to attend them and pronounced the malady to be lead poisoning. On inquiry and examination his diagnosis was confirmed. The water for cooking had been drawn for years from an elevated cistern, through a lead pipe four or five feet long which by chemical examination was found to contain lead. One daughter, four years old, lived two months in a paralytic condition and died. Another, three years old, lived eight years with great debility and other lead symptoms, and died paralyzed. The oldest daughter, Miss Eva, not improving under regular medical treatment, was placed under the care of a distinguished homeopathist of New Orleans, who gave her morphine to relieve her sufferings. Diplopia soon followed, but the morphine was continued, and she awoke one morning perfectly blind. Paralysis followed shortly afterwards. The doctor was called in; he said she was dying, and left. A regular physician was again called. For three months she could not move hand or foot, and was confined to bed for nearly three years. She finally recovered fairly good health. Mrs. La H. was sick three years with lead colic, cramps in the extremities and intense debility but was never paralyzed except an agitans of the hands. Mr. La H. suffered intensely from the beginning, and wrist drop was concomitant with the colic. The tongue and muscles on the right side were partially paralyzed, the right arm and leg completely. Deglutition was difficult, respiration irregular, and the heart's impulse violent. His intellect failed him, and he could not recognize his friends around him. Later the difficulty of breathing was augmented, the lungs evidently being greatly congested; the sufferer finally died with a gush of blood from the mouth containing large coagulated clots. It is to be understood that the attack of lead colic occurred fifteen years previous to this paralytic attack.³⁷

CASES 145 and 146.—Two servant girls were affected with colic, constipation, etc., for quite a long time, and, although warned against the use of the drinking-water, which was found to contain lead, they persisted in its use until they wasted almost to skeletons. They finally ceased using the water, after which they recovered.³⁸

³⁴ Second Annual Report of the State Board of Health of Mass., 1871, p. 27.

³⁵ Professor R. Christison, *Trans. Royal Soc. of Edinburgh*, Vol. XV., Part II., 220

³⁶ Report of State Board of Health of Mass., 1871.

³⁷ Half-yearly Compendium of Med. Science, Jan., 1874, p. 22.

³⁸ J. B. Harrison, *On Contamination of Water, etc.*, London, 1852.

TALKS TO GENERAL PRACTITIONERS.

THE USE AND ABUSE OF PESSARIES.

BY EDWARD E. MONTGOMERY, M.D.,

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THE maintenance of the uterus in its normal position by mechanical means was formerly a very popular method of treatment. With the increased popularity of surgical measures, the pessary has become more and more an instrument of the past. This disuse of mechanical measures is not surprising, as it is but natural that the sufferer should rather seek measures which will insure a cure, than to submit to those which, at best, are but palliative. Not all patients, however, are willing, or desirous, of undergoing a surgical procedure, even though through it complete relief can be promised. Many such patients are enabled, through the use of the pessary, to secure complete relief while wearing it, and a few, ultimately, to secure such changes as will render them comfortable, even after its removal. In order to determine the value of the pessary, it is necessary to consider the class of cases in which this instrument should be of service.

First, it must be understood that not every case of displacement must necessarily suffer inconvenience, as there are both forward and backward displacements which do not give rise to symptoms, and it is only when the displacement is complicated by the existence of inflammatory conditions that the individual becomes aware of the existence of an abnormal uterine position. There are cases, on the other hand, in which no abnormal position of the uterus is determinable by bimanual investigation, in which the use of an instrument affords relief. In other words, a patient who suffers from more or less congestion or inflammation of the pelvis, with tenderness of the broad ligaments, and a heavy uterus, where the traction or jarring of the pelvic organs produces pain, fixation with elevation of the organ is accomplished by the introduction of a pessary and is attended with gratifying relief. This explains how the patient, who is suffering from an anteversion, obtains relief by the use of a retroversion pessary. It is simply that the pessary raises the organ to a higher level, gives it support, prevents dragging, and thus makes the patient more comfortable. It is important that the pessary should be made to fit the individual, rather than the individual to fit the pessary. In other words, the instrument must be one which will not make undue pressure and thus do injury. The determination of the proper size for the pessary is usually accomplished by passing two fingers into the vagina, measuring the distance to which the posterior fornix of the

vagina can be raised, without undue pressure. This is determined by estimating the point on the index finger which would be bisected by the plane of the anterior surface of the symphysis pubis. The roominess of the vagina laterally is determined by separating the two fingers. Thus we can arrive at a comparative estimate of the length and width of pessary that should be required. An instrument which makes undue pressure on the posterior vault of the vagina causes abrasion, ulceration, formation of granulations, and, if neglected, may lead to the pessary becoming embedded, or it may cause perforation. If such a pessary is worn for some time, it produces cicatricial tissue which renders the subsequent use of the instrument painful and difficult.

While the patient wears a pessary it should be remembered that it is a foreign body, whose presence increases vaginal and uterine secretion, so that measures must be instituted to secure cleanliness. This is best accomplished by the use of hot vaginal douches, once or twice daily as the conditions may indicate. It is extremely important to induce the patient to realize that astringent injections should be avoided, as they lead to the deposition of salts upon the pessary, which roughen its surface, increase the irritation and lead to further abrasion and ulceration of the vagina. A person wearing a pessary should be kept under observation. The instrument should not be permitted to go longer than two months without being removed, cleansed, and careful examination made of the vagina to determine that no injury from its presence results. It is just as important that the pessary should not be too small as too large, for a small instrument fails to serve the purpose for which it is used, drops down with the posterior bar pressing more against the rectum, forming an obstruction in defecation, or the instrument may turn, as it is frequently found to do, and lie across the pelvis, or with its posterior surface anterior, or even upside down.

One abuse of the pessary is to regard it as an instrument for replacing the uterus. It should be kept in mind that a pessary should never be used until the uterus can be properly replaced. The existence of adhesions which bind down the uterus, which prevent its being raised to its proper situation, contraindicate the use of the pessary, as what is a mere retroversion may, by the improper use of the instrument, be converted into a retroflexion, a condition more difficult to correct, and which adds very much to the distress and discomfort of the patient. A pessary very frequently is regarded as an instrument which supports the uterus by the fundus upon its posterior bar, but such is an incorrect idea of its action. The pessary does not directly, but indirectly, support the uterus. The uterus should first be replaced in its normal position, then a pessary, sufficiently long to make pulley-like traction upon the posterior fornix of the vagina, introduced. It draws upon the posterior surface of the cervix, lifts it upward, while the other end of the lever, the fundus, must necessarily drop forward; consequently, the posterior surface of the uterus is nowhere in proximity to the posterior bar

of the pessary. The Schultze, figure of 8 pessary, grasps the cervix in one of its portions and lifts it up, thus making sure that the other end of the lever falls forward. The cradle pessary has the cervix rest against its anterior bar, which curves backward and thus accomplishes the maintenance of the uterus forward. It must be considered an abuse of the pessary to use it where the patient suffers no inconvenience from the displacement. Second, where inflammatory or perimetric adhesions exist which preclude the possibility of maintaining the uterus in its normal situation during their existence. Third, in cases of large uteri with acute retroflexion. In such cases the uterus is liable to slip behind the posterior bar and be crowded by it against the sacrum.

GENERAL CONSIDERATIONS OF THE MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

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(Continued.)

It might be well to give some examples besides gouty and rheumatic diathesis in which the local lesion is controlled by a systematic condition. Take, for example, individuals who are subject to chronic constipation; there will be absorption and infection from the intestinal tract; there will be carried into the blood irritating materials which in themselves, in the attempt of the mucous membrane to eliminate, will act as irritants. Besides, the intestinal venous circulation is an enormous one; any obstruction to this circulation from pressure will necessarily slow the general venous circulation and cause damming back of the blood, or cyanotic congestion, in not only immediate, but remote structures. This cyanotic congestion causes over-distension of the blood-vessels, and not only over-distension, but long-continued distension, which thins the vessel wall and permits of rapid leaking of serum into the perivascular tissues, causing that sluggish, boggy edema which resists all our efforts of local treatment. Many a nasal or pharyngeal mucous membrane is practically ruined by the indiscriminate use of the cautery or knife for the relief of this condition, the sole objects apparently being to give *space*, regardless of the destruction of tissue. Had the treatment been directed toward the true cause, the nasal mucosa would have remained intact, and after the relief of the congestion the individual have left a normal secreting mucous membrane. Again, take, for example, cases of children who are mouth-breathers, due to some nasal obstruction; this necessitates a classification as to cause. In a general way they can be

classed, first into obstructive nasal lesions due to malformations, growths, obstruction from trauma, and foreign bodies; and, second, where the condition is fairly normal as to contour and structure, yet from some systemic condition, owing to damming back of the blood, there is brought about an edematous condition of the nasal and naso-pharyngeal tissues. The pharyngeal tonsils (adenoids) are normally present in children and are enlarged in two ways, either by overgrowth or by inflammatory or cyanotic change. If the child is a mouth-breather day and night, you are generally correct in your deduction that the obstruction, whether it be due to some swelling in the nasal mucosa or enlargement of the naso-pharyngeal glands, is a permanent one; but if your child is a mouth-breather *at night only*, you will generally find that the obstruction is due to a vascular engorgement, usually a cyanotic congestion; when such is the case, treatment should be directed toward the relief of this systemic condition, and not operative procedure. The gland is normally present in childhood, and when it does not obstruct nasal breathing or occlude the Eustachian orifice, it should not demand operative interference; and it is only when it obstructs nasal breathing or occludes the Eustachian orifice that it passes from a histological to a pathological structure. Quite often in children the enlargement is due to this cyanotic congestion, and when attention is paid to the intestinal tract and the child relieved of a constipation, regardless of cause, whether it be due to intestinal worms or some atony causing deficient peristalsis, often the glandular enlargement causing interference with nasal breathing disappears.

(To be continued.)

COUNTING THE BLOOD CORPUSCLES.

BY A. ROBIN, M.D.,

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THE "blood count" has a terrifying effect upon the minds of many practitioners, presenting to their imaginations billions of red and white blood corpuscles to be enumerated. In reality, however, it is a very simple procedure, requiring for successful accomplishment a microscope (and no up-to-date physician should be without one), a blood-counting instrument, and a little patience braced by determination. No expertness is necessary. By this I do not intend to convey the impression that an expert will not make the blood count more quickly and with more accuracy than a tyro, but I wish to impress the fact that anyone may in time become expert without any special instruction, save the general directions laid down in this "Talk." Let me emphasize the following points: 1. Blood-counting

is a very important aid in physical diagnosis. You can no more make a positive diagnosis of anemia without a blood-count than you can determine the existence of albuminuria from the edema of feet and ankles or lower lids, without making an examination of the urine. Only recently I examined the blood of a young man who was supposed by experienced practitioners to suffer from anemia, and yet his blood showed 5,200,000 red corpuscles to the c.mm. A blood-count will often swing the pendulum in the direction of a diagnosis of carcinoma in obscure and doubtful cases. Especially is it advisable when you wish to determine the progress of a case of anemia under treatment. The pale visible mucous membranes are inadequate to keep you well informed as to how quickly the vitiated blood responds to the treatment. Moreover, systematic blood-counting is almost indispensable when one wants to keep a full record of his cases with the view of reporting them.

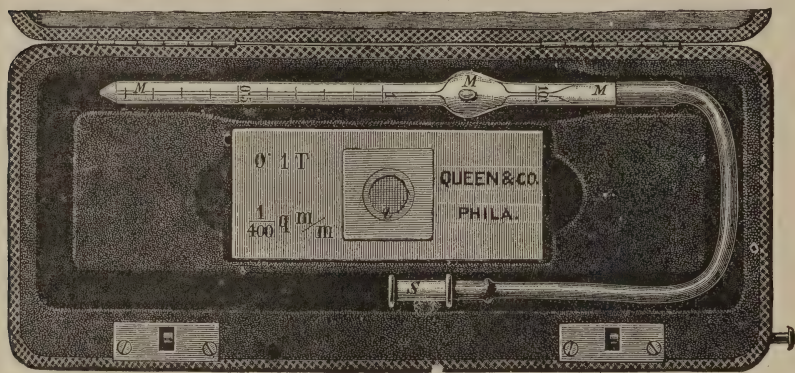


FIG. 1. THOMA-ZEISS HEMACYTOMETER.

2. Having determined to take up blood-counting, procure the best instruments, regardless of cost. The old saying that "the cheapest is often the dearest," is also true in this case. A cheap instrument is inaccurate and tends to discourage any effort on the part of the practitioner, since the results are not conclusive. In blood-counting, each error, however slight, is multiplied several thousand times, thus invalidating the entire process of examination.

The apparatus most useful is the Thoma-Zeiss Hemacytometer, an instrument almost universally adopted. It consists of a counting slide and one or two pipettes, one for the red and the other for the white blood corpuscles. The slide is of ordinary size, made of thick polished glass having at its centre a thin square of glass cemented on the surface. The latter has a central circular opening nearly filled in by another glass disc $\frac{1}{10}$ mm. thinner than the square surrounding it, thus forming a chamber with a depth of 0.1 mm. The surface of the disc is divided by a series of micro-

scopic lines into 400 squares, each having a square area of $\frac{1}{400}$ mm. and a cubic capacity of $\frac{1}{4000}$ mm. Each quadrant of 16 squares is inclosed by additional lines placed between the lines marking the square; in other words, 3 parallel lines on each side form the frame of a quadrant. The pipette consists of a graduated capillary tube expanding near its upper end into an ovoid chamber, which contains a glass pearl for mixing the blood with the diluting fluid. The capacity of the tube is 1 mm., while that of the chamber between the marks 1 and 101 is 100 mm. Thus, by drawing up the blood to the mark 1, a dilution of 1 to 100 is obtained, while when drawn up to the mark 0.5, the dilution is 1 to 200. The second pipette for counting the white blood corpuscles is similarly constructed, except that the bore is larger and the tube is graduated for a dilution of 1 to 10 and 1 to 20. The instrument is also supplied with cover glasses, with ground surfaces.

To make a successful blood-count, strict attention is to be paid to details. These are apparently insignificant, and yet failure will follow the efforts of the careless person who does not observe all the precautions here laid down. 1. Have everything ready for immediate use before you obtain the drop of blood. 2. Observe the most scrupulous cleanliness, not for aseptic purposes, but to prevent the smallest particle of dirt or any other foreign body from obscuring the field of vision, and thus interfering with counting. The diluting fluid, therefore, is to be filtered every time it is used; the slides washed in plain water and carefully dried (no alcohol or ether should be used, as the cement is likely to be dissolved out); the cover glasses to be cleansed in acid alcohol; the pipette, above all, perfectly clean and dry (of the method of cleaning it, I shall speak later). 3. Carry out the first four stages of the procedure as rapidly as possible. The successive stages are as follows: 1. Clean the part from which the drop of blood is obtained. 2. Make a puncture free enough to allow a flow of two or three large drops. 3. Suck a drop into the capillary tube of the pipette up to the mark 0.5 if a dilution of 1 to 200 is desired, or to 1 for a dilution of 1 to 100. 4. Having rapidly wiped off the end of the pipette, transfer it at once into the diluting fluid and draw up the latter to the mark 101. 5. Keeping the tips of your fingers on the ends to prevent spilling, shake the pipette vigorously for about two minutes. 6. Reject the first two or three drops and then deposit one on the centre of the disc, or, as some do, fill in the entire chamber. 7. Place the cover glass on the fluid, carefully avoiding air bubbles, and press firmly at the sides (not in the centre) until you see Newton's rings. 8. Place the slide on a level surface for a few minutes in order that the corpuscles may become equally distributed. 9. Place the slide on the stage of the microscope and take up the process of counting.

Now as to details. Normally, the blood corpuscles are so numerous and tightly packed that to count them on such a small area as $\frac{1}{4000}$ cubic mm. is absolutely impossible, not to mention the fact that the coagulated blood

will form a layer of sufficient thickness to cover entirely the lines which mark the squares. It is therefore necessary to dilute the blood, for two reasons: 1. To prevent its coagulation, preserving the integrity and shape, as well as distinctness, of each corpuscle; and, 2, to dilute it to a degree sufficient to permit the counting. For that purpose we use either Gowers' solution, which consists of:

Sod. Sulphate	gr. 112
Acid. Acetic	f℥ v
Aquae	f℥ iv

or Toisson's solution, prepared according to the following formula:

Methyl violet	0.025 gm.
Sod. Chlorid.	1 "
Sod. Sulphat.	8 "
Glycerin (neutral)	30 c.c.
Aquae destil.	160 c.c.

The latter is the one universally preferred. It possesses the distinct advantage of staining the white blood corpuscles, thus enabling the beginner to avoid them in the count. Besides, in looking over the entire field with a low power, one can approximately judge of the proportion of the white corpuscles to the red. To obtain the blood, a puncture is made either in the pulp of the finger or the convex surface of the lobe of the ear. The latter situation is far preferable. The state of nervousness and even fear into which many persons are thrown by this "operation" is avoided. Some neurotic people will almost faint from the sight of their own blood, however slight the amount, and in these cases the lobe of the ear offers a special advantage. Again, the pain is far less when the ear is punctured, and no pressure is required to keep the patient from instinctively withdrawing the part before the puncture is complete, which makes a second, and often a third, puncture necessary. In children the ear can be punctured with the greatest facility and the least disturbance. For making a puncture, a surgical lancet-shaped needle, the sharp point of a small bistoury, or, what is the most convenient, a lancet especially devised for this purpose (see Fig. 2), are used. An ordinary sewing-needle is often employed, but it

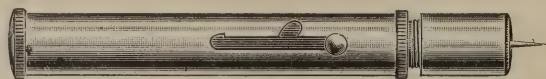


FIG. 2. LANCET FOR MAKING A PUNCTURE.

offers the objection of too deep a puncture, and yet not free enough to permit a flow of a large drop of blood, besides being more painful.

You should not press *gently* with the point of the instrument until it enters the skin, but, with a quick, rebounding movement of the hand, stab the skin to the depth of $\frac{1}{8}$ to $\frac{1}{4}$ of an inch, according to the condition of the superficial circulation. In this connection it is well to bear in mind the

possibility of hemophilia, and it is, therefore, always best to eliminate this affection before a *deep* puncture is resorted to. (A very slight puncture in bleeders is quite sufficient.) Be careful to avoid any pressure on the parts, as it will dilute the blood by causing a transudation of serum. In sucking up the drop, always keep the point of the pipette under the surface to prevent the entrance of air-bubbles. The latter should also be carefully avoided when the cover-glass is placed on the disc. For this purpose it is best to place it by a sliding motion, expelling the air-bubbles as the cover glass is moved from right to left. Should any air-bubbles remain on the disc, the manipulation is repeated after cleaning the slide. Once the blood is mixed with the diluting fluid, the counting can be done at leisure. This is certainly a redeeming feature, and will appeal to the busy practitioner who, in such cases, invariably offers as an excuse the lack of time and frequent interruptions by patients. You can count the blood after a lapse of minutes or hours, by day or night. The blood corpuscles are best seen and most conveniently counted under a moderately high power. Objective 6 and ocular 2, Leitz, or objective $\frac{1}{4}$ and ocular 1 inch, Queen & Co., are the most serviceable combinations. The illumination should be adjusted to suit each case and conditions present. The position of the sub-stage condensor, mirror and diaphragm should be so modified as to render the squares distinctly visible, and, as a rule, a dark illumination is best. Having placed the slide in position, locate first the squares. This can be done by the low power. Then find a quadrant of 16 squares inclosed, as I have mentioned above, within a frame made of three parallel lines, and commence counting from the left-hand upper corner. Count the corpuscles of each square of the upper row, then the lower from right to left, then the third from left to right, and, finally, the last from right to left. This order may be reversed either from the right first or from above downward. The number of corpuscles in each square should be marked down on the paper in the order in which the counting is done. This will not only relieve your memory, but will always show how many squares and which ones you have counted. Some of the corpuscles will be found astride on the line or slightly overriding it. To avoid counting these twice, make up for yourself some rule by which you will always be guided. For instance, count all corpuscles within the square and all on the upper and left side border, not counting any on the lower or right side lines. Having counted 16 squares, divide the sum total by 16 in order to get the average of each; then multiply by the dilution, either 100 or 200, as the case may be, and, finally, multiply this by 4,000, which will represent the number of corpuscles in each c.mm. For example: The first square contained 12, 2d 10, 3d 11, 4th 9, and so on, the total number being 192. This, divided by 16, gives an average of 12 corpuscles to the square. The dilution, we may suppose, was 100, the number of corpuscles in 1 mm. will be $12 \times 100 = 1,200$. Each square has a cubic capacity of $\frac{1}{4000}$ of a c.mm. Consequently, the number of corpuscles in a c.mm. will be $1,200 \times$

4,000 = 4,800,000. This calculation can easily be remembered by the following formula:

$$\frac{\text{Corpuscles} \times \text{dilution} \times 4,000}{\text{No. of squares counted.}} = \text{corpuscles in 1 c.mm.}$$

To obtain most accurate results, 2 or 3 quadrants of the same drop are counted, or 2 to 3 fresh drops used. In the latter case, the pipette should always be thoroughly shaken before a new drop is expelled. A similar procedure is employed in counting the white blood corpuscles, only the diluent fluid is $\frac{1}{3}$ to $\frac{1}{2}$ per cent. acetic acid, to which a little gentian-violet may be added if a stain is desired. The acetic acid destroys the red corpuscles, while the white become more prominent. In cases where the question of expense enters largely into consideration, the counting of both red and white can be done at the same time. Only in this case the dilution should always be 1 to 200 and at least 256 squares counted. The white cells are stained, and, therefore, easily recognized, and the whole field can be gone over in a few minutes. Having determined the entire number of white corpuscles, proceed with the calculation in the manner described above. The normal proportion of red blood corpuscles is 5,000,000 to the c.mm., but this will vary under different circumstances, even in health, and a slight variation below or above the normal limit is not to be looked upon as pathologic. In this connection it is also well to bear in mind that after a severe diarrhea the number of red corpuscles is considerably increased, reaching as high as 7,000,000 to the c.mm., this being due to the withdrawal of plasma from the blood. On the other hand, copious drinking may temporarily diminish the number of corpuscles by the reverse effect. The proportion of white blood cells is normally even more variable, the variation extending from 1 to 300 to 1 to 700 red ones. Having completed the blood count, invariably clean your apparatus. *Never put away the pipettes without thoroughly cleaning them.* Too much emphasis cannot be given to this rule. Any instrument is best cleaned immediately after using it; especially is this the case with the blood-mixing pipette, the capillary tube of which becomes easily clogged up, rendering the instrument worthless. Besides any dirt adhering to the inner sides of the ovoid chamber will render an accurate dilution impossible. It is comparatively easy to clean the instrument right after its use, but it is very hard, if at all possible, to accomplish this 24, 48 hours, or a week later. To clean the pipette, run through it first distilled or clean water, then strong alcohol, then ether, and, finally, a current of dry air to evaporate the latter. (The pipette is dry when the glass pearl is freely movable and does not cling to the sides.) The washing and drying are best accomplished by a double bulb from an atomizer. This not only saves time, but also your lungs. Should there still remain some particles of dirt, clean them with some strong acid, alkali, or acid alcohol.

Another method for determining the relative proportion of red blood corpuscles is by means of the hematokrit, as first devised by Blix. It con-

sists of a metal frame in the shape of two arms, each carrying a small capillary tube 50 mm. in length and 0.5 mm. bore, graduated from 0 to 100. The blood is obtained in the manner described above. The tube is completely filled with blood by means of a rubber tube connected with a dropper. Both ends of the tube are quickly covered with a little vaselin so as to prevent the blood from adhering to the part of the frame with which the terminal ends come in contact. The tube is then placed in the arm, its outer end fitting into a small, cup-like, rubber-cushioned depression, while the

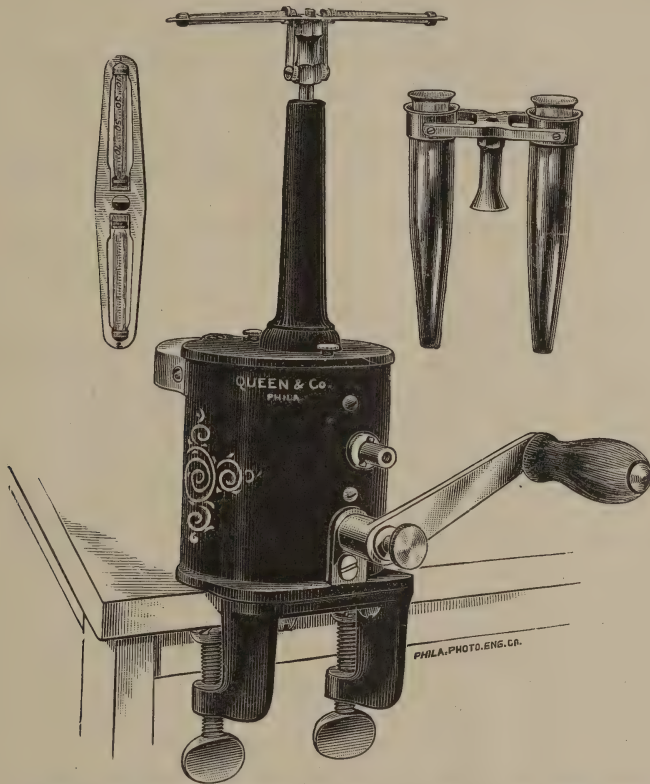


FIG. 3. A DOUBLE-SPEED CENTRIFUGE WITH TUBES FOR SEDIMENTATION AND HEMATOKRIT.

inner end is held by a spring. The whole is adjusted to a double-speed centrifuge, or an electric centrifuge especially arranged for this purpose, and rotated at a speed of 70 revolutions of the crank or 10,000 revolutions by the electric motor, per minute, for 2 minutes. The tubes are then removed and the percentage read off, the scale being rendered visible by a magnifying lens front. The volume of the red blood corpuscles will be seen as a red column, while the white occupy a shorter column above, being almost invisible, except in cases of leucocythemia. Each degree of the scale

represents the per centum by volume and is supposed to contain 100,000 red blood corpuscles. Thus, if the red column reaches the mark 50, the volume is 50%, while the number of red cells is 5,000,000. The main objection to this instrument is its inaccuracy compared with an actual count. The volume will depend on the density of the serum, the relative size and elasticity of the individual corpuscles. It is not at all certain that each degree will represent equally 100,000 corpuscles. Again, in the centrifuge operated by hand, it is very difficult to keep up the required number of revolutions. However, the low price and simplicity of technic recommend this instrument to those who are not in the position to buy an expensive hemacytometer and yet want to have more or less definite information as to the condition of their patient's blood. For clinical purposes, the hematokrit may serve well in determining the progress of a case under treatment. You can establish your own arbitrary rules as to number of revolutions, etc., and, following them out in every case, you get a fair estimate of the relative proportion of red blood corpuscles at each successive examination.

Aniline and Malignant Disease. In 1877, Grandhomme noted that the workmen in an aniline dye factory were liable to severe cystitis, with or without hematuria. Only three years ago Rehn, of Frankfurt, stated that he had found that in aniline cystitis, sarcomatous tumors tended to develop in the bladder. Leichtenstern has recently recorded three cases. A man, aged 51, still in robust health, worked at naphthaline and naphthylamine. Cystitis and hematuria set in, and a tumor developed. An operation was performed, and the bladder was excised; it was found to be a mass of sarcomatous growths. The patient died in two days. The viscera were healthy. The other case must bid us pause in holding the vesical growths to be true "neoplasms." A man, aged 31, worked with toluidine, and soon acquired the characteristic appearances of the cachexia which it induces — earthy-pale complexion and greenish discoloration of the hair and nails, with dysuria and anorexia. Micturition became very frequent, but only a few drops of reddish or greenish urine passed at one attempt. A tender, firm tumor developed in the bladder, rising above the pubes. The passage of a catheter and pressure in the hypogastrium caused extreme pain. Salol, uva ursi, tannin, and alkalies with demulcents did no good. Opiate suppositories, subcutaneous injections of morphine, and hot sitz baths, followed by poultices, brought about a cure in the course of over six months. Within seven months the tumor had disappeared. Leichtenstern, who seems to have proved by examination that the tumor in the first case was a sarcoma, admits that he was puzzled by the second case. Possibly it was a simple, but very acute, proliferating submucous cystitis. This subject needs much consideration. Is it a key to the mystery of new growths? May the disintegration of the highly complex groups of carbon compounds in these new dyes stimulate connective tissue cells in an unfavorable sense? Yet, after all, we are not sure that the aniline-bred tumor is, in fact, malignant.—(*Brit. Med. Jour.*)

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Typho-Malarial Fever So-called. George Dock (*N. Y. Med. Jour.*, No. 8, 1899) discusses at length the appropriateness of this designation and decides that its use is not justified in the present state of our knowledge. The term was first used by Dr. J. J. Woodward to describe (1) fevers in which the typhoid and malarial infections were supposed to be mingled in the same case; (2) adynamic malarial fevers in which a typhoid state develops; and (3) to cover a doubt as to the proper diagnosis. The elder Flint adopted this nomenclature, and many writers have since sanctioned it. Dock, himself, accepted the theory of a possible combination of the two diseases, in a paper written by him, eight years ago, but now declares that he has since made many examinations in suspected cases, but so far has failed to find a case of mixed typhoid and malarial infection. He admits that others have exceptionally found malarial germs in the blood in cases of undoubted typhoid fever, but holds that the clinical picture was in no wise changed thereby. He quotes Janeway, Osler, Thayer and Hewetson as having reported cases of typhoid following malarial fever, or with a few demonstrable malarial organisms, yet without any signs pointing to the existence of a hybrid disease. Laveran, himself, according to Dock, is convinced that neither intercurrent malarial infection in typhoid fever nor typhoid fever following malarial fever, has peculiar features.

Splenectomy in Malaria. Lacetti (*Giorn. Internaz. delle Scienze Med.*, Fascic. 1, 1898) recommends the removal of the spleen in cases of hypertrophic interstitial splenitis, especially when the enlarged spleen is painful. The ordinary congested spleens resulting from chronic malaria may be reduced usually by quinin, arsenic, ergot, strychnin, or even electricity. Lacetti reports having removed the organ in one stubborn case of

splenic enlargement. Six days afterward intermittent fever developed, but was controlled by injections of quinin. He attributes this attack to the sporulation of the malarial parasite, which, according to Pes, may remain latent in the blood for months. The patient experienced also violent pains in the long bones, which, it is suggested, were due to a vicarious action of the bone-marrow.

The Treatment of Malignant Tumors by Bacterial Toxins and Anti-Cancerous Serums. Roncali (*Centralblatt für Bakteriologie und Parasitenkunde*, Bd. XXI., Nos. 21 to 25) has made an exhaustive criticism of this whole subject which is of interest to clinicians, since serum therapy generally concerns internal medicine more than surgery. He points out that fifteen cases only are known in which new growths have been apparently cured by the toxins of erysipelas. In ten of these, erysipelas developed as an intercurrent affection. Unfortunately, the after-history of these ten cases is unknown. *The Medical and Surgical Review of Reviews* (Dec., 1898) summarizes Roncali's conclusions, which show among the strikingly favorable results one case of sarcoma of the neck cured by Kleeblatt, who used injections of pure cultures of the streptococcus, and four (out of a total of 160 cases) were cured by Coley, who injected the toxins of the streptococcus, together with those of the *B. prodigiosus*. Against these rare successes must be placed a mass of cases in which the injections have not only failed in their object, but have done harm. Pure cultures of the streptococcus have produced erysipelas, hastened metastasis, and caused degeneration of internal organs, especially of the heart. Coley, not satisfied with all these evils, has added to those of erysipelas the toxins of the *B. prodigiosus*. This combination has no action antagonistic to malignant tumors. Nearly every one who has worked with Coley's fluid has had negative results. Roncali himself, as recommended by the inventor, used extremely virulent cultures of streptococci, obtained from a diphtheretic membrane and subsequently contaminated with the prodigiosus. The results were disastrous. As regards the general health, even small injections caused a violent febrile reaction. The most striking effect, however, was rapid emaciation, and a destruction of red blood corpuscles. The post-mortem appearances coincided with those found in chronic intoxications, and though ascribed by Roncali to the injections of toxins, could have been explained equally well as the result of an auto-intoxication from the malignant tumor. Richet and Hericourt injected the filtered juice expressed from an osteosarcoma into an ass and two dogs, with the idea of injecting the serum of such "immunized" animals into patients suffering from malignant tumors. These writers claim to have had good results, but they have not been confirmed. Emmerich and Scholl use an "anti-cancerous" serum, obtained from sheep, not immunized against infection by the streptococcus, but dying of a severe streptococcal infection. Their method is practically on the same principle as Fehleisen's and Coley's, since the serum is extremely rich in the toxins of the streptococcus erysipelatosus, the only difference between them being that while with Coley's method the organisms secrete their toxins in broth, with that of Emmerich and Scholl they do so in the blood of a living

animal. In all probability, therefore, this serum is more toxic and dangerous than Coley's fluid. Roncali brings forward other theoretical reasons why serum thus prepared can never succeed. The editor of the *Review* thinks this unfavorable decision is premature. The few positive cases of recovery have not been watched long enough to be sure that the cure is permanent, but in a condition so hopeless as malignant disease they indicate the necessity of a further trial of the method; at any rate, in cases which are not amenable to operation.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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The Experimental Production of Tuberculous Endocarditis.

Michaelis, of Berlin, and Blum, of San Francisco (*Deutsche medicin. Wochenschr.*, Sept. 1, 1898), have definitely established, by experiments upon rabbits, that the tubercle bacillus is capable of producing a verrucose endocarditis. The bacillus in this situation was first described by Heller, in 1886, then by Cornil and Kundrat, but up to the publication of Leyden's paper, in 1896, such observations were very few. So many cases of verrucose endocarditis occurring in tubercular patients showed no bacilli, that two theories have arisen to explain their absence—the one that the toxins of tuberculosis could produce the endocarditis, and the other threw doubt upon the ability of the bacillus to cause the lesion. M. and B. produced solutions of continuity of the aortic valves aseptically through the aorta and then injected cultures of the tubercle bacillus intravenously. That the valves were injured, was proven by the appearance of a loud diastolic aortic murmur. The rabbits died in from 3 to 6 weeks. The sections showed a diffuse tuberculosis, and the hearts, especially the left ventricles, were much hypertrophied and dilated. The injured aortic valves were covered by hard verrucose deposits. The bacteriological examination of these vegetations disclosed many tubercle bacilli, sometimes in masses and sometimes occurring singly. In one case there was a typical miliary tubercle in the middle of a vegetation. No other bacteria were found. The staining of the bacilli was difficult, and when they occurred singly, they could easily have been overlooked. This fact may explain how so many observers have failed to find the bacillus in cases of endocarditis supposedly tubercular.

Subpleural Ecchymoses and Their Significance in Suffocation. Straussman (*Vierteljahresschrift für gerichtliche Med. und öffentliches Sanitätswesen*, III., F. Bd. 15, Hft. 2) recalls the fact that until lately the occurrence of such ecchymoses have been considered of a certain value in the diagnosis of death from suffocation. The writer states that, in the light of more recent investigations, these statements cannot be regarded as trustworthy, and that the small, subserous hemorrhages in the lungs and heart have no practical value as a sign of the cause of death. They occur in other conditions besides suffocation, and they are often not present in the latter case. They only mean that death has occurred from paralysis of the respiration, and not through primary heart failure, and that the respiration has stopped before the heart. In deaths from suffocation, then, they merely denote that the mode of death was a primary arrest of respiration. (From the *Litteratur Beilage der Deutsche Medicinische Wochenschrift*, Sept. 1, 1898.)

The Roentgen Rays and Their Use in the Diagnosis of Tuberculosis. Bécélère (*Arch. d'Electr. Med.*, Dec., 1898), in his paper before the Congress of Tuberculosis, held in Paris, in 1898, suggests the employment of both the fluoroscope and of photography by the X-rays as a very valuable aid in the early diagnosis of tuberculosis of the thorax, the first to determine variations in normal movements of the viscera, the second to detect changes in density. He calls attention to the well-known fact that auscultation, percussion and fremitus often fail us in the early and most critical period of this condition. It is, of course, of the greatest importance to detect such a lesion at the earliest possible moment, and also to discover evidences of latent tuberculosis of the lung, lymph glands or pleura. In the routine examination of subjects apparently healthy, by means of the Roentgen rays, there may be found an abnormal opacity, which indicates a consolidation of the lung tissue, a tumefaction of the bronchial glands, adhesions of the layers of the pleura, or of the diaphragmatic to the parietal layer, or a deficiency in movement of the diaphragm of one side. These lesions may or may not be of tubercular origin, and to confirm the diagnosis, he advises the careful use of tubercular injections. Thus it renders the early diagnosis of tuberculosis easy, whether by revealing the cause of a supposed intercostal neuralgia, or a thickening or adherence of the layers of the pleurae, or the disappearance of the costo-diaphragmatic sinus, or immobility of one side of the diaphragm. It may show that a supposedly acute attack of pleurisy in an apparently healthy person may have behind it an unsuspected consolidation at the base of the lung. In the stage of cavity formation, valuable aid may be given in determining the size and location of the softening, and in prognosis. In those conditions which simulate tuberculosis without bacilli, it is needless to point out the advantages to be obtained. The lungs may be perfectly clear and the symptoms may have arisen from a pyothorax encysted between the lobes, which is capable of producing conditions closely simulating phthisis. Bécélère closes his article by urging that the method he advocates should be used only as a complement to the usual and established means of diagnosis.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Abnormal Reaction of Stomach Contents Producing Constipation and Diarrhea. Sawyer (*Cleveland Med. Gaz.*, Jan., 1899) calls attention to the importance of determining the chemism of the stomach in obscure cases of either constipation or diarrhea. A number of cases of diarrhea among our soldiers, he attributes to a hyperacid condition of the stomach. Of the illustrative cases reported by the author, one is of special interest. The patient, a physician, had a mitral lesion which was fairly compensated. Irregularities in diet and sleep, however, brought about an obstinate diarrhea, which could not be relieved by any medication, from bismuth to half-ounce daily doses of tincture of opium, inclusive. The impaired nutrition finally disturbed the compensation, making the patient's condition quite serious. The stomach was slightly dilated. At first he could not be persuaded to allow the passage of a tube, but additional medication having failed, he consented, and the stomach was washed out. This was followed by immediate improvement, and the patient recovered under lavage, used twice daily. No chemical tests were made, but the gastric contents smelled very sour. In the other cases, similar treatment was followed by the same happy results. In this connection, the author also notes the success attained in the summer diarrheas of infants from the use of the stomach tube. Deficient secretion of HCl is also associated with either constipation or diarrhea, and in these cases lavage will often produce a curative effect. The author explains the etiology of the intestinal disturbance by the fact that an excess of HCl interferes with proper gastric digestion, and the partly digested chyme, being abnormally acid, neutralizes the alkalinity of the intestinal juices, thus further impairing digestion. Again, the presence of this acid material in the small intestine irritates the delicate mucous membrane and the terminal nerve fibres of the plexuses of Auerbach and Meissner, stimulating peristalsis. In deficient or absent HCl, the stomach contents prove irritating from another cause. The starch not being released from its albuminoid envelope, on account of insufficient gastric digestion, acts as a mechanical irritant. Besides, the excessive fermentation in such cases is especially irritating to the intestinal canal. As to constipation, the author, while fully recognizing its frequent occurrence in conditions of altered stomach chemistry, is at a loss to point out the etiologic factors involved.

True Gastralgia. Clark (*Maryland Med. Jour.*, Vol. XLI., No. 5) considers the cases properly called gastralgia to be much less frequent than usually supposed. In the majority of cases in which there is acute gastric pain, the latter is thought to be provoked by either an excess of HCl or by the perverted secretions which are found in a deficiency of the gastric juice. He bears strong testimony to the value of drop doses of Fowler's solution, given preferably before meals, and in the cases where the gastralgic pain is the result of a pure neurosis he has seen these doses often act with great rapidity in relieving the pain. He infers that they may exert some local anesthetic power upon the end organs of the gastric sensory nerves.

Notes on the Demonstrations of Methods in Gastric Therapeutics. Turck (*Lancet*, Jan., 1899) demonstrated, at the St. George's Hospital, London, several of his gastric instruments, notably, the gyromele, or revolving sound, which he claims to be especially useful both for diagnostic and therapeutic purposes. By means of this instrument, it is possible to determine with practically absolute certainty: 1. The exact outline of the stomach on the abdominal walls, the greater curvature, the lesser curvature, the fundus, and the pylorus. 2. The character of the stomach walls: (a) Any considerable thickening of the walls is unfailingly discovered because of the varying ease and plainness with which the sponge revolved against the wall can be felt on the outside; and (b) the distensibility of the stomach can be more readily and more accurately determined by simply using cables of different degrees of flexibility than it can be determined by any other method. From its distensibility the motor power can be quite accurately estimated in cases where there is no pyloric obstruction, as has been repeatedly found by experiment. The pyloric obstruction, if present, is discovered in the process of the sounding of the stomach, pylorus, and duodenum. 3. In addition to the above complete diagnosis of the physical condition of the stomach, the gyromele has been found to be an unfailing means of discovering atrophy, and, indeed, of distinguishing atrophy from functional achylia. This is due to the fact that the revolving sponge is quite as effective as any test meal for stimulating the secreting glands to almost immediate activity. On withdrawing the cable, the sponge is found saturated with the gastric contents, and this furnishes material for bacteriologic and qualitative chemical tests. If the gyromele is allowed to remain in the stomach for a few minutes, the contents will, within 15 minutes, invariably contain HCl, unless there be atrophy of the HCl secreting cells. In order to thus determine with certainty the presence or absence of cellular atrophy, the gyromele is revolved a little longer than usual, and the stomach contents are examined about fifteen minutes after the withdrawal of the gyromele cable. The contents will then invariably contain hydrochloric acid, unless there be glandular atrophy. Its therapeutic value resides in the removal of mucus and stimulation of the stomach walls. The intragastric reagent capsule and the intragastric resuscitator were also fully described and their usefulness demonstrated.

NEUROLOGY.

UNDER THE CHARGE OF

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Fear Neurosis. Prince (*Bost. Med. and Surg. Jour.*, Vol. CXXXIX., Dec. 22, 1898) finds this peculiar condition very common among musicians. It is usually considered a manifestation of timidity, but while it may originate as such, it persists as an automatic physical neurosis. The physical symptoms of fear are presented without the emotion. It is a phobo psychosis. The predisposing cause is fear, the result of natural timidity, which, by repetition, becomes a true habit neurosis, and while the psychical emotion subsides with increasing experience and years, the physiologic manifestations persist. After the full development of the neurosis, apprehension and excitation by public performance fill the role of an exciting cause. The symptoms of the neurosis are consciousness of being observed, faintness, perspiration, flushing of the face, confusion of thought, depression. In some cases there is desire for evacuation of the bowels. The condition is not one of neurasthenia, and in the treatment of cases this must be forcibly impressed upon the patients. Suggestion, either with or without hypnotism, and the artificial creation in the mind of the subject of a fixed idea in line with truth, and antagonistic to the morbid idea, are important parts of treatment.

Contribution a l'etude de la Neurite Ascendante (Contribution to the Study of Ascending Neuritis). G. Marinesco (*La Presse Médicale*, No. XCVI.,*p. 308) reports a case of ascending neuritis having its origin in gangrene of the right leg. Weakness, atrophy, and disturbance of sensation on the postero-external surface of the right thigh and leg were noted. He found streptococci, leucocytes, and degenerated nerve fibres within sections of a nerve taken from the gangrenous tissue, but sections of nerve from areas nearer the cord revealed no bacteria, although leucocytes were present. No bacteria were seen in the spinal cord, but changes in the ganglion cells and perivascular leucocytic infiltration were found. These lesions existed only on the side of the cord corresponding to the gangrene, and only in the lumbosacral region. Marinesco thinks that this case was one of ascending neuritis, beginning in an infection of the nerves, and leading to changes within the spinal cord. The poisonous substance was believed to have been conveyed to the spinal cord by means of the lymphatics of the peripheral nerves. [A report of this case was read by Prof. Leyden before the Verein für innere Medizin, in Berlin, and led to an interesting discussion in regard to the occurrence of ascending neuritis (*Vereins-*

Beilage, No. XIV., *der Deutschen Med. Wochenschr.*, May 12, 1898). Authentic cases of ascending neuritis are rare, especially when suppuration has not occurred.]

Recherches sur l'Atrophie Musculaire et la Contracture dans l'Hémiplégie Organique (Researches on Muscular Atrophy and Contracture in Organic Hemiplegia). G. Marinesco (*Semaine Médicale*, No. LVIII., 1898, p. 465) believes that muscular atrophy is the rule and not the exception in organic hemiplegia. He has found degenerative and atrophic changes in the muscles, but only in three out of sixteen cases of hemiplegia that he examined could he find alteration in the ganglion cells of the anterior horns of the cord, and in two of these cases the altered cells were not numerous and might easily have escaped detection. The intramuscular nerves were normal in all except two of the sixteen cases, and only in one of these two were the alterations very noticeable. In one case he observed paralysis of a lower limb from a lesion situated in the superior portion of the ascending parietal gyrus and in the paracentral lobe. Only ten cases of this character have been reported. Marinesco believes that centers controlling the blood-vessels are situated in the Rolandic area. He believes that the atrophy in hemiplegia is due to the loss of the influence exerted by the neurons arising in the cortex upon the neurons arising in the spinal cord and passing into the sympathetic nerves. While the atrophy is chiefly due to vascular disturbance, it is also due, in part, to immobility of the limb. Marinesco has observed atrophy of the face following removal of the sympathetic nerve for hystero-epilepsy. This fact seems to indicate that derangement of the sympathetic system may be the cause of facial atrophy.

MEDICAL DISEASES OF THE KIDNEYS.

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The Use of Methylene Blue in the Diagnosis of Renal Diseases. Cabot (*St. Paul Med. Jour.*, Feb., 1899) states that the means at present for diagnosis of nephritis are unsatisfactory. Autopsies may reveal a nephritis which, during life, showed no albumin; again, we may have albumin and casts, and autopsy reveal no nephritis. Nor is the estimation of urea or total solids diagnostic. The test Cabot wishes to consider is a

new one by Achard and Castaigne. Five cm. of powdered methylene blue are dissolved in 20 parts of sterile water and injected deeply into the patient's buttocks, under antiseptic precautions. With deep injections there is no pain or irritation. At time of injection the patient is required to empty his bladder. Half an hour afterward he is again to pass water, and again at the end of 1, 2, 4, 8, 12, hours, and as long as the urine remains colored. In normal cases, the blue or bluish-green tinge in the urine usually appears within the first half-hour, and always within an hour. In certain forms of nephritis the color does not appear so soon. In normal cases the maximum coloration, a deep indigo, is reached in about three hours, and the urine is not clear again for two or three days. The drug is given subcutaneously in order to eliminate the influence of possible variations in the rate of gastric and intestinal absorption. Thus, in a case of gastric cancer they found that the blue did not appear in the urine until the fifth hour, when given by the mouth, though the kidney was sound.

Achard and Castaigne report 127 cases, of which 40 came to autopsy. In none was the diagnosis contradicted, although not infrequently every other clinical test proved fallacious. Of the 127 cases, 62 eliminated the blue normally, and none of these proved to have nephritis. Eight died, and at autopsy had sound kidneys, although 3 had shown albumin during life and were supposed to have nephritis. The 62 cases mentioned were made up of gripe, typhoid, rheumatism, pleurisy, phthisis, valvular heart disease, syphilis, chlorosis, gastric catarrh, etc. Three were healthy persons. Sixty-five excreted the blue more slowly than normal. Of these, 20 came to autopsy and proved to have renal lesions, 15 chronic nephritis, 3 pyelonephritis, 1 cystic kidney (no albumin during life), 1 multiple renal infarction. Among the 45 which did not come to autopsy, but in which the blue was excreted more slowly than normal, there were cases of acute gastroenteritis, broncho-pneumonia, acute pleurisy and typhoid; also various chronic affections other than nephritis. In discussing these latter cases, A. and C. insist upon the hypothesis that their test measures should be decisive—not as to the anatomical lesions, but the functional activity of the kidney; not what it looks like, but what it can do in the way of excretion. They do not believe that permanent anatomical lesions are present in all cases which for a time filter the blue through imperfectly, but that the kidney cannot do its work properly, and that renal insufficiency is present. The inference drawn is as to how well the kidney is doing its work, which is the important matter.

The importance of the test is seen (1) especially in cases of nephritis without albumin, not infrequently met. In 7 cases where the blue was always excreted very slowly, but in which no albumin was present, autopsy showed lesions of nephritis. (2) In albuminuria due to passive congestion, distinguished from genuine nephritis, the methylene blue test is of special value, since congestion and most other causes of albumin (nephritis excepted) do not retard the excretion of the blue, even when oliguria and casts are present. (3) In one-sided lesions of the kidney, such as hydronephrosis, where examination of the separated product of the affected kidney enables us to judge by the color alone the functional

efficiency of such kidney. (4) A. and C. lay much stress on latent nephritis in tubercular patients. In ten cases they found slowness in the elimination of the blue, though only one of these had albuminuria. Seven came to autopsy and had interstitial nephritis. (5) The authors' test is also of value in determining whether in a given case the intolerance of a certain drug is due to renal insufficiency or to other causes. Thus, a patient unable to take salicylates showed slowness in the excretion of methylene blue, pointing to renal insufficiency (temporary or permanent). According to A. and C., a slow excretion of pigment manifests itself in one or more ways: 1. By late appearance, 2, 3, or even 6 or 7, hours after injection. 2. By late disappearance, *i.e.*, not until the 5th, 7th, or even 10th day. 3. by intermittency of the blue color. 4. By masked elimination.

Other authorities supporting this test partially are Bard and Bonnet. They confirm the results for chronic interstitial nephritis, but find in the epithelial or parenchymatous variety that the blue passes through the kidneys, if anything, more quickly than normal, showing here an excess of permeability. Bard does not have his subjects urinate at the time of injection, so whatever color appears within the first hour is diluted by the urine within the bladder. He finds that the normal appearance of the blue begins within one hour, and counts any case in which color appears within half an hour as showing an increased permeability. Bard examined 23 cases, of which 2 were healthy, 9 of primary interstitial nephritis (with 2 autopsies), 3 of secondary contracted kidney (1 autopsy), 3 of epithelial nephritis (2 autopsies), 4 of pyelonephritis (1 autopsy), 1 of mercurial nephritis, 1 of angioneurotic edema, with the following results: (1) Blue was excreted normally in pyelonephritis. (2) In the interstitial cases, primary and secondary, the blue was excreted slowly, just as A. and C. had said. (3) In 5 cases of parenchymatous nephritis, acute and chronic, the blue appeared within half an hour, reaching maximum in $1\frac{1}{2}$ hours, and disappearing within 36 hours. Bard thinks the symptoms in parenchymatous nephritis are due, not to the damming back of the substances which ought to be excreted, as in contracted kidney, but to an excessive excretion and the dyscrasia which this drain induces. Polocki and Guenard tested with the methylene in cases of eclampsia. They found that the blue passes the kidneys as quickly as in labors without eclampsia. Chauffard and Castaigne found in hepatic disease marked intermittency in the excretion of the blue. In 32 cases of cataract tested by Frenkel, delay in the appearance was found in 8, and in 24 a delay in a disappearance of the reaction (72 to 120 hours). In epilepsy, Voisin tested 20 cases and found that during a paroxysm the elimination is slower than in the same patient between attacks. The slowness in the excretion of the blue went parallel to a diminution in the toxicity of the urine, and suggests that the blue test may be used as a short and simple way of ascertaining degree of toxicity. In view of the fact that the failure of sugar to appear in the urine, even after large amounts have been swallowed, may be due not solely to the vigor of the individual's sugar-converting power, but wholly or partly to renal impermeability, Achard recommends that all such tests be preceded by his methylene blue test. Dufour found no

difference in the excretion of blue in the two opposite mental conditions of depression and excitement. By masked excretion, Voisin and Hauser mean cases in which the urine showed no blue in the first few hours after the injection, but a bluish-green color may be brought out by adding acetic acid and heating. Achard and Castaigne confirm this, and name the substance thus secreted chromogen. Cases in which the chromogen appears before the blue they call "dissociated elimination." After testing 28 cases for both chromogen and blue, they concluded, that unless both chromogen and blue are delayed in appearance, no nephritis can be found. A second chromogen was also noticed by A. and C. in decomposed urine. The experience of Cabot and McGirr, themselves, with the deep injections of methylene blue were very unsatisfactory. Only four cases thus treated were reported. In the remainder the drug was given by the mouth. The dose, half a gram, which was diminished to $\frac{1}{10}$ of a gram ($\frac{3}{4}$ of a grain); in 5 the larger doses produced nausea and some vesical tenesmus. The only symptom with the smaller doses was a frequency of micturition. The authors agree with Bard in that (1) cases of interstitial nephritis excrete methylene blue much more slowly than normal cases. (2) Other forms of nephritis excrete normally, or, if anything, faster than normal. (3) The test is harmless and easily performed, and promises to be a real addition to our means of diagnosis and prognosis in cases of nephritis. (4) The time of first appearance of the color would appear to be the most important and reliable of the data furnished by the test.

DERMATOLOGY.

UNDER THE CHARGE OF

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On the Treatment of Carbuncle. Manley (*Ind. Med. Rec.*, Dec. 16, 1898), after criticising both the excision of carbuncles and the conservative treatment by internal remedies and mild local applications, proceeds to a discussion of a treatment which he has successfully employed in 50 cases during the past 5 years. The treatment consists of the injection into the carbuncular tissues of pure carbolic acid. In the beginning papule, 2 or 3 drops of an 80% or 90% solution will suffice; in the suppurating stage, 15 to 30 drops are required. The patient first experiences a burning heat, which is soon followed by a cessation of all pain. The acid blanches and chars all of the tissues and coagulates and destroys the purulent foci. The relief from pain is prompt and the patient's rest and appetite are restored. In no cases were toxic results from absorption of the drug noted. Injections

lose much of their value when used late, although even then they will greatly relieve pain and check the disintegrating processes. The affected area should be cleansed, the surrounding skin protected from escaping acid, the skin sprayed with ethyl chlorid and a long, strong hypodermic needle thrust down to the base of the carbuncle. But one puncture through the integument is needed, the needle being partially withdrawn and then thrust in different directions. Care is necessary to avoid injecting directly into a large blood-vessel, or injuring a nerve trunk. When multiple pustules are present, the phenic acid injections entirely dispense with the need of incisions for the relief of tension and for drainage. One injection, as a rule, suffices for a cure, although a second or third is occasionally needed.

Peculiar and Severe Results Following an Injection of Corrosive Sublimate. De Amicis (*Monatshefte für Prakt. Dermatologie*, Feb., 1899) reported, at the Annual Meeting of the Italian Society of Dermatology and Syphilography, a case of a syphilitic patient who had received 43 injections of corrosive sublimate. During the 44th injection, which was given in the region of the angle of the left shoulder-blade, the patient suddenly experienced a severe pain, with cramps in the abdomen, and vertigo. The same evening, retention of urine occurred, and on the following day there was a palsy of the left leg, the bladder paralysis continuing. By evening, a hemorrhagic herpes zoster had developed, having as its starting-point the site of the puncture. On the third day, a complete paraplegia had manifested itself. The patient died at the end of a month, from septicemia.

Iodoform as an Internal Remedy in Lupus Erythematosus. Whitehouse (*New York Med. Jour.*, Feb., 1899) reports an extensive case of disseminated lupus erythematosus of the superficial discoid variety, successfully treated by the internal administration of iodoform. The patient had been troubled with the disease for three years. She was directed to use lotion containing 1 dram each of sulphate of zinc, sulphid of potash and precipitated sulphur, to 4 ounces of water. This was employed for 2½ months without any benefit. The administration of iodoform was then begun, the drug being given in 1-gr. pills, after meals, the local remedy being continued. During the first few weeks there was an aggravation of the eruption, the lesions becoming more inflammatory in character. At the end of the third week, the redness, inflammation and itching began to subside, from which time on uninterrupted improvement took place. The eruption disappeared entirely in three months. Besnier, in 1880, recorded two cases of lupus erythematosus successfully treated with iodoform.

On the Influence of Pathological States upon the Elimination of Water and Carbon Dioxid by the Skin. Barratt (*Brit. Med. Jour.*, Jan. 14, 1899) has investigated the modifications of elimination of water and carbon dioxid by the skin, produced by the ligation of a limb, and by the application of carbolie acid. The average normal output of water from the skin of the arm (up to the insertion of the deltoid) is, at 35° C.,

about 4 grms. per hour, and that of carbon dioxid about 20 mg. A ligature applied close to the shoulder causes a diminution of water elimination amounting to as much as 20%, whilst the carbon dioxid is greatly increased. The application to the skin of carbolic acid causes a decrease of the elimination of water amounting to about 50%, with but a slight decrease of carbon dioxid. The injection of pilocarpin nitrate, gr. $\frac{1}{100}$ to $\frac{1}{500}$, into the skin of the palm of the hand, produces, shortly afterward, a sensible perspiration in the form of droplets, over a circular area around the puncture. After carbolic acid has been applied to the palm, pilocarpin produces either a few and minute droplets, or, more commonly, none at all. The author points out that these experiments indicate that the formation of carbon dioxid is an expression of the general metabolic activity of the skin, and not of a dermic respiratory function, as is claimed by some. The dry, harsh condition of the epidermis after the application of carbolic acid is due to the arrest of the secretion of sweat.

PEDIATRICS.

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Hemorrhage as a Sign of Congenital Syphilis. Gottheil (*Archiv. of Pediat.*, 1898) calls attention to the importance of bleedings in infants as symptoms of congenital lues. He points out that these may be the only mark of the disease, especially at first; but they are almost invariably accompanied by a diminution of the coagulability of the blood similar to that of hemophilia, and the case usually goes on rapidly to a fatal termination. Disease of the vascular walls is one of the most frequent effects of the syphilitic poison, leading to hemorrhagic discharges from the mouth, the bowels, the bladder, or the nose; to blood accumulations under the skin and mucosae, or in the serous cavities and internal organs; or, finally, making the syphilitic eruption itself hemorrhagic. The author urges the importance of remembering these facts in the treatment of infants who have hemorrhagic discharges or a hemorrhagic eruption, the cause of which is obscure.

Hysteria in Children. Mayer (*Penn. Med. Jour.*, Feb., 1899), summarizing in his scholarly paper the views held on hysteria, comes to the conclusion that, notwithstanding our latest advances in nervous pathology, hysteria is still a *terra incognita*. As etiologic factors he considers any con-

dition which weakens or inhibits the psychic forces, or breaks down the will. Predisposing causes are (1) improper education and environment, and (2) heredity. The author attributes a preponderating influence to the former and comparatively little to the latter. Considering the symptomatology, he states that in children hyperesthesia is more often found than anesthesia. Richet's hysterogenetic and hysterofrenetic zones are rarely found. In this connection he emphasizes a very important point in the differential diagnosis between hysteria and epilepsy. In the former the patient resists the opening of the eyes, while in the latter he does not. In hysteria the face is flushed and red, in epilepsy it is pale and colorless. The peculiar chattering of the teeth in hysteria should also be looked for. As to treatment, it is either very difficult or very easy, according to the ability of the attending physician to assume entire control of the patient and surroundings. Isolation in a hospital is often the only means of bringing about a permanent cure. Proper diet, hydrotherapy, massage and electricity are also indicated. Hypnotism, on the other hand, should never be employed in children. Speaking of prophylaxis, the author believes that State interference, together with proper education, could accomplish much in this direction. He reproves the custom of educating children in convents, pensions, and boarding-schools, as one especially predisposing to hysteria. A. R.

Pericarditis in Children. Baginsky (*Klin-therap. Wochensch.*, 1898) supports Henoeh's statement that this disease is more common in children than in adults. At the "Kaiser and Kaiserina Friedrich Kinderkrankenhaus," the latter authority observed 64 cases (24 were accompanied by polyarthritis, 11 were tuberculous, 11 had pneumonia [7 with erysipelas, 6 with empyema], 5 had grave diarrhea, 6 measles with pneumonia, 3 had endocarditis. Meningitis, purulent otitis media, and diphtheria, completed the list). Serous, fibrinous, hemorrhagic and purulent forms of this disease may be distinguished in children. The serous variety, irrespective of etiology, is usually ushered in with severe symptoms: high fever, great pain, active, rapid respirations, violent cough sometimes, and a countenance expressive of great suffering. The temperature is irregular, the pulse varies in strength and fullness, and does not furnish us with positive evidence regarding the condition of the heart. The heart of the young child, supported as it is by the large liver of infancy, lies more horizontally than the adult organ; hence, the displacement of the cardiac viscus and the "triangular" outline of cardiac dullness may not appear. The dullness does extend to the right of the sternum, however; though such extension does not enable us to distinguish this affection from cardiac dilatation. Auscultation furnishes the most important evidence, for "pericardial friction" is nearly always heard at the "base." The loud, blowing, endocardial sound (Rosenbach) may be heard as the effusion subsides. The purulent exudate is harder to diagnose, as the amount of pus is usually small. It accompanies grave constitutional conditions, such as erysipelas, pneumonia, empyema, etc. The bacterium coli, streptococci, staphylococci, or the bacillus pyocaneus, may be found in the pus. The tuberculous variety is rare and con-

stitutes a very malignant form. In pericarditis accompanying rheumatism, the heart muscle is often, though not always, affected. The earliest sign here is the enlargement of the cardiac dullness. Next come friction noises which may last for a while and gradually wear away. The heart does not always regain its former size. The fibrinous form, with early adhesions, is the frequent variety which accompanies rheumatism. A second attack of rheumatism may repeat this picture; or, evincing dyspnea, enormous enlargement of the cardiac area, hepatic enlargement, dilation of the cervical veins, and a venous pulse, the child may succumb. The author regards the salicylates as useless in this disease. He lauds digitalis and diuretin. The latter drug may yield astonishing results. Under certain conditions, strophanthus may supplant digitalis.

THERAPEUTICS.

UNDER THE CHARGE OF

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A Few Observations on the Action of Hypodermic Injections of 2 1-2 per cent. Solution of Sodium Cinnamate on Tuberculous Patients. Lovtsky (*Vratch*, Vol. XX., No. 1) emphasizes the well-established fact that the treatment of tuberculosis is mainly hygienic and dietetic. All attempts to kill the bacilli in the organism have met with signal failure, and the only thing left to do is to build up the tissues so as to enable them to fight off the diseased process by fibrous encapsulation of the already affected areas. However, there are many who cannot change their mode of life to any great extent, nor has the community, as yet, built any sanitariums for such patients. In these cases, reliance is to be placed mainly on drugs, and of these Peruvian balsam, or its active principle, cinnamyllic acid and its salts, has been found by many competent observers to be the most efficacious. Their numerous observations led them to the following conclusions: 1. The treatment by sodium cinnamate has an invigorating influence on the vascular and nervous systems of the patient, improving digestion and sleep, stopping the night sweats, and in general promoting a feeling of well-being. 2. By proper treatment, small and medium doses of sodium cinnamate are absolutely harmless. 3. Sodium cinnamate causes leucocytosis and inflammation, with subsequent formation of fibrous connective tissue around the tuberculous nests. It probably also aids in the elimination of the poison from the infected tissue, thus aiding it in overcoming the infectious process. 4. Incipient forms of tuberculosis of the lungs are apparently cured in a comparatively short time. 5. In treating

patients with considerable infiltration but without cavities, the disease is not only improved for some time, but the local infection is limited. 6. Tuberculosis of the intestines is apparently also mitigated by sodium cinamate. 7. Advanced forms of the disease do not respond to this treatment, but even in these cases the patient feels better and the night-sweats stop. The author, by the suggestion of Prof. Shapiro, has experimented with this drug in 8 cases of pulmonary tuberculosis, with results fully conforming to the above conclusions. Nearly all the patients gained in weight. The bacilli for a time disappeared from the sputum, reappearing in far lesser numbers. The sputum changed from purulent to mucous, and the cough diminished. All the patients remained, during the treatment, at their daily vocations, not changing their mode of life. The treatment was administered twice a week. The injection was made into the cellular tissue of the back, between the shoulder-blades. The initial dose was 1 division of a Pravaz syringe, gradually raised to 6. Distilled water was used in making the solution, and other antiseptic precautions rigidly observed. A. R.

The Use of Morphia in Cardiac Disease. Toogood (*Lancet*, Nov. 26, 1898) has found that morphia is a very useful drug in certain forms of heart disease, although most authors have opposed it; he is not able to explain it physiologically, but clinically, in cases where the stomach has been disturbed (principally by the continued use of drugs), with pain over the pericardium, a hypodermic injection of morphia will be found to give great relief to the suffering and be of great use toward restoring compensation. He even administers it in cases where the urine is albuminous, with gratifying results; the amount of albumin diminishing, with the quantity of urine increasing. He explains the good effects by its sedative action on the vascular system (in large doses), thus restoring it.

Protargol in the Treatment of Blepharitis. Moneson (*Gaz. Méd. Belge*) believes it valuable in this disease, being both antiseptic, astringent and somewhat caustic; he uses it sometimes as a wash, 20% strength, other times as an ointment, 5%. It should be applied about twice daily, and from day to day all wild hairs should be removed, when another application should be made.

Argyrosis of the Conjunctiva the Result of Protargol. Denig (*The Times and Register*) reports a case, for which he ordered a 5% solution of this drug. The patient continued to use it for some months without consulting him, and, when he returned, the fornices of the conjunctiva were quite well colored.

Acetanilid Poisoning. Keller (*Phila. Med. Jour.*, Feb. 4, 1899, Vol. III., No. 5) reports a case of a child, 3 years, given as much of the drug as would cover a ten-cent piece. Two hours later, his face was dusky, tongue and mucous membrane were blue, skin cold, no sweating, pulse 140, small and soft, tendency to sleep; urine voided was brownish. Stomach was

washed out, hot applications to the surface of the body, $\frac{1}{100}$ of strychnin hypodermically, a 5i. of whiskey in hot water every 15 minutes by the mouth, and a $\frac{1}{2}$ pt. of hot salt solution per rectum. Under this treatment he returned rapidly to his normal condition.

Some Further Notes on the Use of Bromid of Strontium in Epilepsy. Roche (*Indian Med. Rec.*, Dec. 1, 1898) corroborates his writings of 1894 and 1896 in his opinion of the use of strontium bromid in epilepsy, and quotes Dr. Dixon Mann (*Manual of Medical Jurisprudence*) as to its being less poisonous than the potassium salts. He has taken 53 daily for weeks without any unpleasant effects. In administering it to patients, he usually gives a 5ss night and morning, in some bitters, and, if the patient has any forewarning of the attack, 30 grs. are to be administered immediately, and repeated every hour, if necessary. Strict attention is paid to diet; the patient abstaining from all indigestible food, and in the first stages only partaking of fish and vegetables.

Veratrum Viride in Puerperal Eclampsia. Costoni (*The Virginia Med. Semi-Monthly*, Jan., 1899), in contradiction to Potter and others, does not believe that this drug is dangerous, when administered in eclampsia, but claims it is one of the most useful when employed in large doses; the only guide being the pulse, which must be brought down and kept below 60. He has used 52 in 12 hours and 3ss in 24. The best method being hypodermically, as these cases usually need prompt and efficient attention. His conclusions are: 1. That veratrum viride is a perfectly safe remedy; even when used in extra large doses, no danger need be feared, so long as the patient is kept in the recumbent posture. 2. It is almost a specific when used early in the case for all cases of puerperal eclampsia. 3. Those who inveigh against it have either not used it at all or have used it too sparingly. 4. Use the pulse as a guide, and give the medicine in 10 or 20-drop doses hypodermically every 30 minutes until the pulse is reduced to 60 per minute, and continue the remedy in smaller doses at longer intervals until coma disappears entirely.

Death Resulting from a Patent Medicine. The *Pharmaceutical Journal* reports the death of an infant to whom the father gave 3 drops of "Bateman's Pectoral Drops" to relieve flatulence. An analysis of the nostrum revealed a large proportion of opium.

Congenital Absence of the Glans Penis. Atkinson reports, in the *New York Medical Journal*, a case of entire absence of the glans, while all other parts of the organ were normal. The man sought medical advice on account of his inability to pass a full stream of urine, and also because he did not enjoy sexual congress as he thought other men do.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Trachoma: Original Investigations on its Etiologic Organism.
I. The Organism as Seen in the Tissues and Secretions. II. As Seen in the Cultures. III. Successful Inoculation. IV. Toxins and Antitoxins. Snyderaker (*Jour. Amer. Med. Assoc.*, Feb. 4, 1899) presents a most interesting and complete article treating of the organisms found in trachoma. He has obtained the organism in pure culture and has produced the disease in the human conjunctiva, from which he has again obtained the organism. The organism resembles, but is easily differentiated from, the pneumococcus; the trachoma diplococcus is smaller, has slight motility, with different culture peculiarities and pathogenesis. Snyderaker's description of the organism is as follows: "*Origin*.—Unknown; seems to occur most frequently in malarial districts. *Form*.—Round diplococci, which in the tissues and first bouillon culture are enveloped in a gelatinous capsule. In the tissues they lie in small groups, each organism separate from the others. In bouillon they usually are seen as isolated diplococci; at times they are seen in small clusters or short chains, though the clusters and chains are always composed of diplococci. Often the diplococcus is seen turned on end, so that only a single coccus appears; in this position it is possible to see the capsule especially well marked. On solid culture media they simulate staphylococci; on gelatin they show an intermediate form. *Motility*.—In the hanging drop the organisms exhibit a slight degree of motility. *Vitality*.—Cultures die in bouillon in about two weeks; on agar, they live for months. *Anilin stains*.—Organism stains well with ordinary anilin stains; also by Gram's method. Capsule does not stain, but septum between cocci seems at times to have an affinity for stains, especially for methylene blue, causing the organism often to resemble a bacillus. *Growth*.—Grows rapidly in incubator, more slowly at room temperature. Bouillon becomes turbid in 36 hours. Abundant growth on serum in 48 hours. Grows somewhat slowly on agar, especially at room temperature. *On serum*: White, moist, membranous-like streak with a scalloped edge along line of inoculation. Edge is white, the center yellowish. *On agar*: Resembles somewhat the growth on serum; the edge exhibits the same scalloping. The growth on agar is more raised than that on serum. The difference in color between the center and the borders of the growth is even more marked; the center is distinctly yellow, while the borders are milk white. *In bouillon*: At the end of 10 days, white, sand-like deposit settles at bottom of tube.

In gelatin: Growth somewhat funnel-shaped. White, wavy, thread-like growth along the stab, consisting of small, agglutinated globules. Grows somewhat heavier toward the surface, and on the surface forms a white membranous growth which shows the same peculiar scalloping of the edges, as the growth on serum. The gelatin liquefies very slowly on the surface, but not along the stab. *Oxygen requirements.*—Facultative aerobic. *Odor.*—After developing one week, on any of the culture media, and especially in bouillon culture, it has a pronounced urinous odor, which, as the time goes on, becomes very offensive.”

Infective Sarcomata in Dogs. Smith and Washbourne (*Brit. Med. Jour.*, Dec. 17, 1898) continue the report of their research on this interesting subject, an earlier paper having appeared in the *Journal of Pathology and Bacteriology*, Jan., 1898. After abstracting the literature upon the subject, and giving their method of inoculation and its results, and describing the course taken by the tumors after subcutaneous inoculations, with a full report of the results of their experiments and their examinations, the authors have come to the following conclusions: “1. The tumors in question are infective, round-celled sarcomata occurring in dogs. 2. The tumors can be transplanted from the genitals, where they naturally occur, to the subcutaneous tissue of other dogs. 3. The tumors can be transplanted from subcutaneous tissue to subcutaneous tissue through a series of dogs. 4. The tumors, after reaching the maximum of growth, may disappear spontaneously, with or without ulceration. 5. The tumors may continue to increase, and may cause death by secondary deposits forming in the viscera. 6. If the tumor should disappear, the animal is then immune to subsequent inoculation.”¹

Malaria: Immunity: Absence of Negro Immunity: Variety. Smith (*Brit. Med. Jour.*, Dec. 17, 1898) discusses some of the features of immunity to malaria as observed in Sierra Leone. The negro natives of Sierra Leone suffer from a mild, rarely fatal form of malaria. The negro soldiers coming from Jamaica, Barbados, St. Lucia, etc., immune to the malaria of their respective countries, suffer from the Sierra Leone form; the attacks require careful treatment, in spite of which they are not uncommonly fatal. The difference in the severity of the affections is well shown where the native and the imported soldier are kept side by side, the latter alone suffers. From this and similar facts the writer is inclined to believe that: (1) There may be more than one form of immunity to malaria, and that the immunity acquired in one country does not protect under different climatic conditions. (2) There may be more than one type of the malarial organism; immunity against one being inefficient against another. As we have been believing that the negro is strangely immune to all forms of malaria, it would appear, from the data submitted by Capt. Smith, that we must revise our existing views.

¹ Lazarus-Barlow (*A Manual of General Pathology*, p. 662) is not convinced that the tumors are sarcomata, but regards them as special forms of granulation tissue, not histologically different from the sarcoma.

On the Relations which Exist between Human Tuberculosis and Bovine Tuberculosis. (*The Jour. of Compar. Med. and Veter. Arch.*, Jan., 1899.) The paper is a translation by Ravenel of an article by Nocard (*Annals of the Pasteur Institute*, Sept., 1898). Admitting the identity of the various forms of tuberculosis as observed in mammals, the author proceeds to discuss the relation between avian tuberculosis and the foregoing. He briefly reviews the literature on the subject and gives the results of his effort to convert the bacillus of Koch into an organism having the cultural peculiarities of the bacillus of avian tuberculosis. Sterilized collodion sacks are filled with bouillon and seeded with the tubercle bacillus. After sealing, the sack is introduced into the peritoneal cavity of a chicken, where it is permitted to remain for a minimum period of four months—a longer time is preferred. At the end of this time, the sack is collapsed, and contains but a small quantity of slime-like material, in which are bacilli, usually alive. At first, cultures made from these sacks grow slowly, later they take on all the characters of the avian type of the organism. Guinea pigs, inoculated with this modified organism, react as to the organism of avian tuberculosis. The author believes that he has determined "that it is possible to give the bacillus of human tuberculosis the biological characters and the virulence which characterize the bacillus of avian tuberculosis."

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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Climate of Colorado in Diseases of Children. Gardiner (*Jour. of the Amer. Med. Assoc.*, Jan. 28, 1899) has made an investigation, with the following results: In all diseases of the gastro-intestinal tract, characterized by diarrhea, such as enterocolitis, cholera infantum, dysentery, simple diarrhea, etc., the testimony was overwhelmingly in favor of the climate of Colorado exerting a specific effect, both in rendering such diseases much less frequent and in diminishing their virulence when they did occur, the fatality in such cases in infants and children being small in Colorado as compared with states with less favorable climatic conditions. This unusually small number of diarrheal diseases, and the low mortality from the same in Colorado is, however, not at all surprising, when we consider the etiology of such diseases. Their time of greatest prevalence and destructive effects upon infants is during the summer months, when continual heat is enervating, and fermentive changes in all foods are apt to be active. The heat

in Colorado is never the humid, relaxing, long-continued physical depressor found in many of our large cities, and even rural districts, elsewhere. The sun is hot, withering and fierce, at times, but in the shade, and at night, the air is cool and comfortable. The milk-supply, due to non-septic dry air, moderate thermometric range, and, in most cases, better physical condition of cows, insures a better nutriment in bottle-fed babies; while the mother who nurses her baby has also this great advantage of environment, and gives to her child the vigor imparted by air and sunshine.

Pulmonary Tuberculosis among the Insane at St. Peter, Minnesota. Tomlinson (*Proceed. of the Amer. Psychol. Assoc.*, 1898) has made post-mortem examination of 72 patients, and, of these, 24 were cases of phthisis. In none of the cases studied was there complete freedom from lung involvement, while in some of the cases where death was due to nephritis, the progress of degeneration was as great as in the well-defined cases of pulmonary tuberculosis. In the autumn of 1896, there was a marked increase in the number of cases of tuberculosis in the hospital, and the illness of the herdsman employed by the institution and the death of a patient employed in the cow barn led to the examination of the herd, with the result of finding one-half of the animals infected with tuberculosis. It appears, however, that the increase in the number of deaths from this cause went on, "in spite of the fact that all the milk from the infected and suspicious cows was boiled before using, and the unsound cattle isolated." Why the cattle were not promptly killed is not explained. Phthisis among the insane is, in old institutions like the hospital at St. Peter, a proportionately more common cause of death than in general practice outside of the large cities, the death-rate for the last year recorded being 46% of the number of deaths for the year. The disease is most common among primary defectives of the connective tissue type, to which most epileptics and cases of so-called adolescent insanity belong. The nationality of those dying of phthisis was: Scandinavian, 17; Irish, 13; German, 10; American, 7; French, 2; Polish, 1. Dr. Tomlinson attributes the nephritis and lung disease to over-feeding, combined with enforced idleness, overcrowding and poor ventilation.

On the Question of Disinfection of Dwellings. Dserjgowsky (*Vratch*, Vol. XX., No. 1) points out the following requirements which a disinfectant must meet in order to be useful: 1. It must act with certainty, destroying pathogenic bacteria under all circumstances. 2. Its action should be least poisonous to men, and, if it does possess any deleterious effects, they should permit a rapid and easy removal after disinfection. 3. It must have no injurious effect on furniture or other articles. 4. It should be rapid in its action. 5. It must be simple, requiring no special skill for its employment. 6. It must be cheap. Hardly a single disinfectant at present employed meets all these indications. The best of them is undoubtedly formaldehyd, but even this is not as effective as was at first expected. The author has performed a large number of experiments at the Institute of Experimental Medicine, and come to the conclusion that the Schlossmann-Lingner

method of using formaldehyd is the best. He also established the fact that the addition of glycerin is very useful, inasmuch as it prevents the formation of trioxymethylene and the consequent loss of formalin. It also retains the vapor much longer. On the other hand, it is somewhat objectionable on account of the changes it produces on the colors of cheap fabrics and the longer retention of the odor of formalin in the room. The influence of this method on domestic parasites is practically nil. Roaches perish only when directly exposed to the spray of glycoformalin, while bed-bugs are not at all affected. The author finally concludes that we do not as yet possess an all-around method applicable in all cases, and, therefore, disinfection should be done by a specialist, who would employ the various methods to suit the conditions present. This should be under the control of the Board of Health, and the people fully recompensed for any unavoidable damage inflicted on their furniture, etc., by the disinfection, as is done in the case of diseased cattle. It is also desirable that uniform methods of procedure be established, thus avoiding contradictory conclusions arrived at by different observers.

A. R.

SURGERY.

UNDER THE CHARGE OF

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Twenty-three Splenectomies. Jonnesco (*Gaz. des Hop.*, 1898), since 1896, has performed this operation 23 times—once for an enormous hydatid cyst, and 22 times for malarial hypertrophy. The patients were between 12 and 63 years of age. In 4 cases the general condition was good; there was marked anemia in 5. In 5 there was marked cachexia, with edema of the lower extremities, and a large decrease in the number of red blood corpuscles. One case died as a result of the operation, while 7 others succumbed from the poorness of their condition from complications not dependent upon the spleen. The operation always had a curative effect: the cachexia disappeared, the red corpuscles increased, and the malarial intoxication disappeared. The urinary toxic symptoms also always decreased. These excellent operative results confirm the author in the opinion which he holds, in common with Saveran, that the spleen, instead of being an organ that protects against malaria, is the harbor in which the malarial plasmodium congregates, and from which it is discharged into the system. Hence, the removal of the spleen in malarial subjects is indicated where it is enlarged, as it suppresses the greatest source of infection and cures the patient. He therefore advises the operation before adhesions have formed or the cachexia has rendered the subsequent operation more grave. Leukemia is the sole contraindication to this operation.

Removal of a Calculus from the Common Bile Duct Two Inches Long and Three and One-half Inches in Circumference without Entering the Duct. Thornton (*Lancet*, 1898) reports an interesting case in which a calculus, 2 in. long and $3\frac{1}{2}$ in. in circumference, was removed from the common bile duct of a man who had suffered from frequently-recurring attacks of obstruction without the passage of calculi. A smaller stone was found in the bladder and removed. It was impossible to dislodge the large stone, so the duct was incised and the stone removed. No attempt was made to suture the wound in the duct. A drainage tube was carried down by it to the depths of the abdominal pouch and packing placed to cut off the rest of the peritoneal cavity. The flow of bile ceased on the third day, and the wound closed by first intention. For the first three days there were large quantities of bile discharged, 2 or 3 pts. daily. The patient made a perfect recovery, and is free from all symptoms, either of jaundice or colic.

The Sterilization of Catgut by Dry Heat. Dauber (*Lancet*, 1898) describes as follows the method employed by Tscherning, of Copenhagen, for the sterilization of catgut, and says that he has found it very satisfactory in his own cases: The ordinary commercial catgut is placed on trays in the sterilizer, between sheets of cellulose paper. It is then heated for 6 hours consecutively; for the first hour at a temperature of 60° C., for the second and third hours at 100° C., and for the fourth, fifth and sixth hours at 140° C. It is then removed and placed in double-sealed envelopes of cellulose paper. It is then subjected, for another two hours, to a temperature of 140° C. The envelopes are placed in racks in the sterilizer, and each is labeled with the number of the size it contains. The ligatures are kept and transported in these envelopes till the time of the operation. This dry catgut is readily handled, has all the advantages of flexibility and more rapid absorption, without any of the disadvantages of the other kinds. The method of raising the temperature by slow degrees prevents the catgut becoming brittle, the grease and oil in the catgut being driven off gradually at the lower temperatures.

Silver and Silver Salts in Surgery, with Special Relation to Wound Surgery. Bainbridge (*Med. Rec.*, 1898), from personal observation of the results obtained by Credé in the use of the silver salts as antiseptics, reports the following favorable points: (a) No evidence of suture irritation. (b) No stitch abscesses. (c) No area of dermatitis about the wound, as is sometimes seen with iodoform. (d) No systemic effect, even when the amount of antiseptic was large. In addition, the author gives these practical suggestions regarding its employment: (1) A small quantity of the citrate is all that is required. This is important, as the salts are rather expensive. (2) Solutions must be made fresh. They are chemically changed if exposed to light for some time. (3) One should be sure of his preparations. (4) No corrosion of instruments need be feared. (5) Stains produced on towels, etc., can be removed by washing, provided they have not been exposed to the light for a long period of time. The internal adminis-

tration of the salts, or their use hypodermically, in the treatment of systemic infection, is a fruitful field for investigation, from which brilliant results may be expected.

The Importance of Rectal Examination in Doubtful Cases of Appendicitis. Delatour (*Brooklyn Med. Jour.*, 1898) points out the fact that the appendiceal abscess may lie within the pelvis and entirely evade the superficial examination of the iliac fossa. In these cases, the point of tenderness is frequently absent, the rigidity of the rectus muscle absent, or else present to a moderate degree on both sides; no tumor is appreciable, and still the pain and the temperature with the rapid pulse point to an active process going on in the region of the appendix. The author illustrates his point by a series of very instructive cases, and shows that a rectal examination will often disclose an appendiceal abscess that can be detected in no other way. His cases also illustrate the value of operation where no tumor can be detected in the iliac region.

Urethritis in Male Children. Abt (*Medicine*, 1898) reports a number of instances of simple and specific urethritis, and shows that the non-specific variety is practically self-limited and has a natural tendency to recovery without any sequelae. On the other hand, the specific variety has all the characteristics seen in the adult and is liable to all its complications, with the exception of gonorrheal arthritis, which is, however, frequently seen after vulvo-vaginitis. The diagnosis is made by the presence of the gonococci and the longer duration of the disease. Infection of the anus and rectum may occur if care is not exercised.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Serumtherapy in Ozena. (*Serumpathie der Ozena*, Frankengerger, *klin. Therap. Wochensch.*, Nos. 39-40, 1898.) The author has treated 3 cases with injection of anti-diphtheritic serum after the method of Belfanti and Della Vedora. The first patient received, from Oct. 9, 1897, to Feb. 14, 1898, 30 injections, representing 26,600 units. These injections did not arrest the crust formation, but after Jan. 11, 1898, the patient could not take the injection every two days, and once was obliged to rest four days without treatment. The crusts formed in good quantity in the nose, but gave off no odor; the membrane appeared redder and more swollen. A

similar result was noted two and a half months after treatment closed. The second patient received, from Oct. 12 to Dec. 14, 1897, 18 injections, 14,200 units. During the treatment the nose was douched twice a week. The nasal condition improved to the extent of diminution of crust formation and entire freedom from any odor. The patient was seen five months after treatment was stopped. Neither crusts nor odor were detectible; the membrane was very red, entirely normal in appearance. Similar results were obtained in the third case, which is still under treatment, but has received 13 injections, 13,000 units. With no desire to attribute a specific value to these injections, it must be admitted that their action on the mucous membrane was very favorable, both in modifying the secretion and in lessening its tendency to dessication, and that although crusts are formed, they are freed from the specific odor of ozena. Despite these results the author does not believe that the favorable action of these injections proves the parasital origin of ozena, nor that this affection is caused by the bacillus of Löffler. In one case the author has obtained results exactly similar to those derived from serumtherapy by injections of a saline solution. The patient, who had been affected with ozena for eight years, received, in all, 15 injections of the saline solution, which were followed by considerable improvement. If this last observation can be confirmed by others of a similar nature, our conception of the serumtherapy treatment will have to undergo considerable modification, in the sense that the conclusion would have to be formed that in ozena, as in other infectious maladies, the serum solutions act not on the microbe—the cause of the disease—but on the human organism—its nervous system—by stimulating its power of resistance. (Abstracted by S. Jankelevitch, in *Rev. Hebdom. de Laryngol, etc.*, Dec. 17, 1898.)

A Case of Calculus of the Uvula. Goodale (*Bost. Med. and Surg. Jour.*, Vol. CXXXIX., No. 23) reports the case of a child, 2 months of age, who had choking and obstruction to breathing in the prone position. A calculus, 4 mm. in diameter, was detected on the anterior aspect of the uvula, midway between the tip and junction with the soft palate. It was enucleated with cutting forceps, crushed, and found to consist of amorphous particles, with fat crystals, fat drops, and fatty degenerated epithelium. The author supposes that "the mass was situated in a dilated mucous gland and had arisen through obstruction of the duct of the gland." He found no other case in literature, but discovered two cases of calculus of the soft palate, one reported by Anselmier, the other by C. A. Parker.

Chronic Urticaria of the Larynx. Freudenthal (*New York Med. Jour.*, Dec. 31, 1898) reports a case in which an examination of the patient, complaining of vague symptoms in his throat, as though there were something in his larynx (right side), which he felt like pulling out, showed a lingual tonsil somewhat enlarged, a diffuse redness of the laryngeal surface of the epiglottis, with a slightly edematous elevation on its right side. The epiglottic picture varied, at one time showing one or more herpetiform prominences with edematous surroundings, at another a deep red color, and, again, perfectly pale. This laryngeal syndrome, with recurrent general

urticaria associated with indigestion, established the diagnosis of chronic laryngeal urticaria. Diet of the plainest character and country air improved the underlying cause and the laryngeal symptoms. [Digestive disturbances are usually the cause of such conditions, either acute or chronic.—Ed.]

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Cataracts of Rapid Formation. Dujardin (*Jour. des Sciences Méd. de Lille*, Oct. 22, 1898) reports a case of keratitis with hypopyon in which, without the slightest history of traumatism, the lens became suddenly cataractous, reaching total opacity in three weeks. The patient had not sustained injury, and had refused all surgical intervention, such as paracentesis or Saemisch incision. The lens was successfully removed, although the corneal disease left leucomata. The cataract was likely due to spontaneous perforation of the corneal ulcer. The author recalls cases of almost instantaneous maturation of senile cataract, reported by Panas, Delbis, and Fuchs. Scheffels reported a case of double diabetic cataract, maturing in both eyes within 9 days. Certain it is that diabetic cataracts are the quickest to mature.

Large Foreign Bodies in the Conjunctival Cul-de-Sac. Thilliez (*Jour. des Sciences méd. de Lille*, Dec. 17, 1898) reports a case in which a good-sized hazel-nut was retained 6 weeks in the right inferior cul-de-sac. In reviewing the literature, we find numerous interesting cases on record. Mackenzie and de Wecker mention instances in which dead flies have been retained as long as 8 days. Yvert reported a case of a smithy who retained for some time a piece of coal as large as a pea. Dujardin mentions a similar case. Remy mentions a case in which an oat-grain remained in the lower conjunctival sac for 5 months, and, when removed, was in a state of germination, having a sprout 5 cm. long. In the INTERNATIONAL MEDICAL MAGAZINE, March, 1898, there is mentioned a case reported by Croskey in which a Russian carried, for 8 months, in his upper conjunctival cul-de-sac, a piece of wood, 18 mm. long, 6 mm. wide, and 3 mm. thick.

The Etiology of Trachoma. Snyderacker (*Jour. of the Amer. Med. Assoc.*, Feb. 4, 1899) has published the results of his recent original investigations on the etiologic organism of trachoma: 1. As seen in the tissues and secretions. 2. As seen in cultures. 3. Successful inoculation. 4. Toxins and antitoxins. He has apparently adhered to the regular *modus operandi*, and his findings fulfil the classic requirements for the definite associa-

tion of a micro-organism with an infectious or contagious disease. Snyder shows an extensive knowledge of all previous work in this line, and claims that many of the results are confirmative of his findings. The trachoma organism, as found by him, is a tiny, capsulated diplococcus which is present in the trachoma nodule, which is at times, though not frequently, present in the secretions. It changes its form and size on different culture media. It is obtained in cultures with great difficulty, it being necessary, on an average, to inoculate nine bouillon tubes before a culture is secured. It dies in liquid culture-media in about two weeks, but lives for months on solid media. The organism stains well with ordinary anilin stains; also by the Gram method. The capsule does not stain, but the septum between the cocci seems at times to have an affinity for stains, especially for methylene blue, causing the organism often to resemble a bacillus. It is facultative aerobic, and after one week it produces a urinous odor. Snyder has hopes of the discovery of an efficient antitoxin, and promises a future paper on his work in this direction. Claims of the discovery of the specific organism of trachoma have been so frequent that the whole profession has become skeptical, and, for this reason, full recognition is never accorded to such work. Snyder has certainly gone to a lot of painstaking labor, and is thoroughly scientific, and clinical laboratories everywhere should immediately take measures to prove or disprove his claims. We acknowledge a full growth of skepticism in regard to the efficiency of any antitoxin over a 50% solution of boroglycerid, applied locally. We think future treatment will continue local.

Ocular Complications of Puberty in Females. Fachatte (*Paris Thesis*, 1898) reports as consecutive to the first menstruation, interstitial keratitis, iritis, neuritis, choroidal and retinal hemorrhages, exudative choroiditis, irido-choroiditis, and retinal detachment. He also mentions embolism from a menstrual cause, and hemorrhage into the anterior chamber cured by the first menstruation. Fachatte has collected numerous instances in literature, and verifies his findings by extensive bibliographic references. The paper is a compilation rather than a clinical study.

Prognostic Significance of Retinal Hemorrhages. Ray (*Amer. Prac. and News*, Dec. 15, 1898) makes some desultory remarks upon retinal hemorrhages in certain blood conditions, in which he recalls some trite but important opinions. The late Dr. Agnew, of New York, once told the writer that whenever he encountered a case of simple retinal hemorrhage in a person past 60 years, he expected death from cerebral hemorrhage within three years. S. Mackenzie says that the corpuscular weakness of the blood must fall below 50% before there is a tendency to anemic hemorrhages of the retina. Hence, the hemorrhage is a sign of serious anemia, often before a blood-count is made. Ray concludes by saying that the prognosis in retinal hemorrhages in the young is usually favorable, but when this condition is found after 50 years of age, the outlook becomes more serious, even when organic kidney disease can be excluded. Hutchinson states that in such cases there is an arterio-sclerosis of the retinal blood-vessels dependent on

gout. Bull, Nettleship, and others take a similar view. Dr. Hasket Derby has recently reported a series of cases of retinal apoplexy in which he has followed the cases for some time, and he states that the symptom is an ominous one; only 5 of 31 cases were still living, most of the cases dying suddenly from apoplexy or heart disease.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Treatment of Gonorrhea. Janet (*Klin.-therap. Wochensch.*, No. 51, 1898) frequently makes use of salves and soluble bougies in the treatment of gonorrhea. The salves are recommended in the acute inflammatory conditions, and are to be applied to the urethral mucous membrane by means of sounds. The combination commonly used is as follows:

R Sodii bor.	grs. vii.
Zinci oxid	3ss.
Lanolin	3ss.
Glycerin	f3jss.

In chronic inflammations he makes use of the above combination, to which is added, nitrate of silver, $\frac{1}{2}\%$, or salicylic acid $\frac{1}{2}$ to 1%. He occasionally employs urethral suppositories, composed of cocoa-butter as a base, and containing either 25% iodoform, or 1% of silver nitrate. These suppositories are only to be introduced as far as the bulbous urethra. He claims for this method of treatment the minimum amount of local irritation and the deeper penetration into all the folds and follicles of the urethral mucous membrane.

Castration and Resection of the Vas for Hypertrophy of the Prostate. Loumeau (*Annales de la Polyclinique de Bordeaux*, Jan., 1899) reports 8 cases of hypertrophy of the prostate, complicated by incomplete retention, in which a double vasectomy was performed. According to the author, the results were absolutely negative, when the cases were again examined, between the 3d and the 6th month after operation. These results are in accord with the report of the Congress of Urology. Castration, according to the author, is capable of bringing about most excellent results in the majority of cases.

Reinfection of Syphilis. Borowsky (*Gaz. Méd. Belge*, Dec., 1898) reports the case of an officer who was treated for active secondary syphilis in

1889. In 1897 the author was again consulted by the same officer in reference to a small ulcer on the penis, which had appeared two weeks after coitus. A short time after his admission to the hospital, a roseola, followed by papules, appeared on his body. The author is somewhat in doubt as to the nature of this second eruption; while acknowledging the possibility of a relapse, he assumed, because of the long interval of freedom from his first attack, that the penile ulcers were probably true chancres.

Chronic Catarrhal Prostatitis. Christian (*Jour. of Cut. and Gen.-Urin. Dis.*, Jan., 1899) considers the effect of bicycle-riding upon chronic inflammation of the prostate. He is of the opinion that the saddle of the ordinary bicycle, by pressure, does but little harm, either to the normal prostate, or when the seat of a chronic inflammation. When using the most improperly constructed saddle, the pressure is expended upon the bulbo-membranous junction, rather than upon the prostate.

Combination of Syphilis and Epithelioma of the Tongue. Kenny (*The Australas. Med. Gaz.*, Dec., 1898) chronicles the unusual combination of syphilis and epithelioma of the tongue in a male patient of 49 years. After the syphilitic lesion had disappeared, under the use of appropriate remedies, an epithelioma made its appearance, which was excised. The diagnosis was confirmed by microscopic examination.

General Staphylococcus Infection Originating in the Urethra. Rendu (*Gaz. des Hop.*, Jan., 1899) reports the case of a man, aged 26, admitted to the Necker Hospital for retention of urine. He had been unable to urinate for 10 days, and exhibited considerable constitutional irritation, fever, etc. A few hours after admission, the symptoms became very grave; the temperature reached $105\frac{1}{4}$, headache was agonizing, and the patient was somewhat delirious. From the severe head symptoms, a meningitis was diagnosed as an independent lesion. Under appropriate treatment, the patient was made fairly comfortable until four days later, when a circumscribed gangrenous area appeared over the sacrum; still two days later, the testicle became red, swollen, and tender. From May 5th to May 10th, corresponding to the 5th and 10th days of the infection, the symptoms were stationary, the temperature fluctuating between $103\frac{1}{2}$ and $104\frac{1}{4}$. On May 12th, a large crop of furuncles appeared on the legs and on the shoulders. On May 18th, the author found, for the first time, an endocardial murmur, and the urine was loaded with albumin. From May 18th to June 1st, the patient had repeated attacks of hematuria. In all, 39 abscesses were opened, including a suppurating knee-joint. The patient was discharged, cured, Oct. 1st.

Gonorrheal Arthritis. Gaither (*Medical News*, Jan. 21, 1899) calls attention to the discovery, by Höck and Neisser, of the presence of the gonococcus in effusions drawn from joints affected with gonorrheal arthritis, and to the demonstration of its presence in the blood stream by Thayer and Bloomer. Gonorrheal arthritis is divided into the serous, sero-fibrinous, sero-purulent, and purulent forms. The knee-joint is the one most com-

monly involved; the next in order are the ankle, shoulder and hand. The disease is present in 2 per cent. of all cases of gonorrhea in males and rarely occurs in females. It usually develops between the third and fifth weeks of the gonorrheal attack; sometimes it develops within a few days, and, again, months afterward, as the result of chronic posterior urethritis. There is usually a rise in temperature in the acute forms to 104° F. The effusion occurs rapidly, the tension producing aggravating pain. The temperature drops to nearly normal in a few days. The endocardium and pericardium are not involved as frequently as in articular rheumatism. The urethral discharge is not influenced by the appearance of the joint complication. In chronic gonorrheal arthritis, the invasion may be slow and constitutional symptoms slight. Absorption, as a rule, is slow, and deformity may result from the adhesions. In severe cases the synovial membrane may be thickened or its surface become granular and puffy. Erosion of the articulating cartilages and destruction of the bone substance and the periosteum may completely destroy the joint. The bursas may undergo similar changes to those which take place in the synovial membrane of the joint. Treatment is unsatisfactory; quinin in doses of 5 to 10 gr., t.i.d., and biniodid of mercury, $\frac{1}{10}$ gr., are useful. Copaiba in large doses, and salol, together with the application of leeches to relieve the swelling and pain, and the use of the Paquelin cautery, applied daily, are of benefit in some cases. When the case is sub-acute or chronic, with delayed resolution and impairment of motion, massage, and particularly forcible gradual flexion of the joints, hastens the return of voluntary motion. Force should only be used in flexion. If adhesions keep the joint in a position of flexion, the tendons should be severed before forcible extension is attempted. The patient should be warned against the great danger of permanent disability in the event of another attack of gonorrheal arthritis. Two cases are reported, the first in a man aged 25. The joints of the second and third fingers were involved. The patient was given capsules containing 10 gr. of copaiba, 5 of cubebs, 3 of salol, and 1 of pepsin. Hot lead and opium lotions were applied locally every two hours. The pain practically disappeared on the sixth day. The second case occurred in a male aged 24. He developed arthritis of the right knee-joint following gonorrhea. The same medication was resorted to as in the former one, with the addition of urethral irrigation of a solution of the bichlorid of mercury, 1 to 40,000. The joint was wrapped in cotton, and hot lead and opium lotion applied every two hours. In convalescence the knee-joint was stiff and could only be slightly flexed. Massage was given to the knee every day with gentle force. Motion gradually returned. The capsules were continued for about three weeks. At the end of four weeks the patient was practically well. The improvement was attributed more especially to the copaiba.

LAB. J. L.

Treatment of Hematemesis. Professor Mann recommends physiologic rest in the treatment of hematemesis due to gastric ulcer. No food should be given by the mouth, not even ice or iced water. Small hypodermics of morphine (not above $\frac{1}{4}$ gr.) are of service. The only drug for arresting hemorrhage in which he has any faith is turpentine.

GYNECOLOGY.

UNDER THE CHARGE OF

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AND

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Treatment of Complete Rupture of the Perineum. Kelly (*Maryland Med. Jour.*, Jan. 21, 1899) proposes to treat complete laceration of the perineum by a deliberate dissection and freeing of the sphincter ends, drawing them out about $1\frac{1}{2}$ cm. from the tissues, cutting off the scarred ends and effecting a direct union of the freshened ones by two or three buried catgut sutures. In addition to these buried sutures, a splinting suture of silkworm gut is passed through the middle of the sphincter, near the edges of the wound, and on up through the septum, splinting the ends together and taking the tension off the catgut. Great care must be taken not to leave any dead spores in closing the remainder of the wound in the usual way, in order to avoid all risk of infecting the buried sutures.

Uterine Perforation During Curettage. Elder (*Med. Press*, Jan., 1899) relates two cases in which the uterus was perforated during dilatation with Hégar graduated dilators, without any serious consequences. The risk of this accident is much diminished by a preliminary bimanual examination of the parts, to ascertain the condition of the appendages and the direction of the uterine body. It is in those cases in which the uterine walls are softened by recent abortions or labors at term, by sepsis, by cancerous, sarcomatous, and tuberculous degeneration—conditions most exposed to injury from instruments—that digital exploration is of service, whether for the removal of decidual remains or the clearing up of diagnostic doubts. [This accident is very likely to occur in acute flexions. Even with the most scrupulous care the stretching of the canal and the impinging of the point of the instrument against the thinned convex wall, will frequently result in rupture. The accident is generally not attended with any untoward symptoms.—Ed.]

Effect of Thyroid Extract on Uterine Fibroids. Polk (*Med. News*, Jan. 14, 1899) reports 10 cases of uterine fibroids in which thyroid extract was administered. The net result in 9 cases has been improvement, the greatest existing in those who took the treatment longest. Its manifestations were: (a) Control of the menstrual flow; (b) arrest of the growth, and, in some cases, diminution of the size of the tumor, and, apparently, softening of it; (c) disappearance of pain and diminution of tenderness in the growth, and also of the sense of abdominal and pelvic disten-

sion; (d) improved general nutrition. In one case the medicine could not be employed because of gastric disturbance. In every instance tachycardia was the most common drawback; next, restlessness and sleeplessness, when the drug was taken at bedtime; and, lastly, indigestion. [My experience with this drug is that, in the great majority of cases, the restlessness and nervous excitement are so great that the drug cannot be continued sufficiently long to serve a useful purpose.—ED.]

Influence of Castration upon the Human Organism. Pfister (*Bulletin Méd. de Paris*, Dec. 15, 1898) gives the following figures, the observations being made upon 116 cases: The menopause was produced in 94.8% of these cases, but 30% preserved the menstrual molimina. The sexual appetite has persisted in 26%, diminished in 30%, and disappeared in 43%. As to sexual pleasure, it continued to be experienced by 22.6%, with diminution for 24.4%, but 52% no longer experienced it. The uterus, as a general rule, was atrophied; the vagina and the vulva have been more rarely. There was an atrophy of the breasts in 29% of the women. The tendency to obesity was increased. The flashes of heat were usually observed after the operation, but generally disappeared spontaneously. The voice was often modified after the operation, and that for a long enough time, but rarely in a decided degree. As to the results given by the operation from the point of view of the troubles which indicated it, one counts 87 cures, 18 marked and 6 slight ameliorations.

Experiment in the Treatment of Ineradicable Cancer of the Uterus. Buist (*Scot. Med. and Surg. Jour.*, Jan., 1899) describes a case in which he ligated the uterine vessels in inoperable uterine cancer. The operation diminished for a time the size and, probably, the growth of the tumor, and it is possible that it had some influence in delaying the onset of hemorrhage. It did not prevent the ordinary issue of the disease, nor did it seem to relieve the pain.

Cancer of Neck and Bifid Uterus. Pollisson (*Soc. des Sciences Méd. de Lyon*, Dec., 1898) presented an anatomical curiosity, a bifid uterus with two cornua, and with a portion of cancerous cervix removed for cancer of uterine neck. The vaginal hysterectomy presented some operative peculiarities: the size of the operative floor, which caused a very great inclination of the clamps, which could be closed with difficulty; the difficult separation of the peritoneum from the mass, and the impossibility of reaching the posterior cul-de-sac. In fact, the two uterine bodies were covered with the peritoneum, except the posterior face, and between the uterus and rectum there existed only the cellular tissue. This woman, married, aged 50 years, had menstruated regularly; she had had 9 pregnancies, 3 to term, 2 to 8 months, and 4 miscarriages at 3 months. Before the pregnancies at term, before the miscarriages, one asked if the cornu was less susceptible of distending during pregnancy, but it could not be determined on which side the pregnancy existed. In the case of a bifid uterus, the persistence of the menstrual congestion of one cornu has been noticed during the pregnancy

of the other; so that it may be asked, Is not the persistence of menstruation during pregnancy a sign of double uterus? This woman had no appearance of menses during pregnancy, but it must be remarked that in her case the bifidity was not complete. A double uterus is very rare, and, clinically, is only exceptionally diagnosticated. Pollisson was able to make a clinical diagnosis in one case of placental retention after abortion. In making the uterine toilette, he was able to introduce the finger into the cavities in different directions. The diagnosis can be made by the alternative development of one cornu during pregnancy.

Vagino-abdominal Hysterectomy. Delagenière (*Le Progres Méd.*, Nov. 12, 1898), after describing in detail several methods of vagino-abdominal hysterectomy, says that its sequelae are the same as those of simple abdominal hysterectomy, with the addition of the special danger of infecting the serous membrane in passing from the vaginal step in the operation to the abdominal; that while it presents the advantages of facility of execution, these are outweighed by the danger of infection which the patient necessarily undergoes. Hence he proscribes it absolutely when the operation can be made complete by either the abdomen or vagina alone. Vagino-abdominal hysterectomy should be chosen only when the operation necessitates the employment of the combined routes. Uterine cancer is the only condition which fills these requirements; for he believes that in all cases of cancer there should be removed, at the same time, the uterus, the upper third of the vagina, and all the iliac ganglia.

The Choice of an Anesthetic. Dr. Silk regards special knowledge and skill in the management of the anesthetic, the duration of the operation, and the posture of the patient as important points to be considered in selecting the anesthetic. In children up to 3 years he gives chloroform, from 3 to 12 the A.C.E. mixture, from 12 to 60 ether, and for people over 60 the A.C.E. mixture. This last anesthetic is also chosen in the case of the fat and plethoric. In acute lung disease chloroform seems to answer best, but in more chronic cases he commences with the A.C.E., and gradually increases the proportion of the ether as the operation becomes prolonged. He does not like ether in cases of uncompensated heart disease, or when the arteries are atheromatous. The A.C.E. mixture is best in renal disease, in operations about the head and neck. Abdominal operations involving much shock require ether. Many of the alleged drawbacks to ether in such operations are probably more fanciful than real, and arise from the difficulties incident to the case; but these difficulties should lead the anesthetist to assist the surgeon as much as possible in these cases.

Alcohol in the Treatment of Erysipelas. Fisher applies 85 to 95 per cent. alcohol to the inflamed area by means of linen or cloth which is kept constantly moist. In the 25 cases thus treated, he found the diseased process either rapidly abated or stationary; suppuration, if it occurs at all, is limited, and gangrene never occurred. He had no deaths.

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In the INTERNATIONAL MEDICAL MAGAZINE for March last, attention was called to a remarkable communication on the treatment of appendicitis, by Dr. H. W. Carpenter, of Oneida, N. Y. He claimed that in an experience of nearly forty years, seeing annually from five to twenty acute attacks of inflammation in the right iliac fossa, such as are now classed as appendicitis, he had had one death only, and resorted to no cutting operations, though in a few cases abscesses were opened by aspiration, followed by compression. His treatment included a sedative in the beginning when the pain was severe, together with poultices in all the cases, but in the way of internal medication his chief reliance was on small doses of bichlorid of mercury (gr. $\frac{1}{120}$ every hour), with $\frac{1}{4}$ minim of tincture of aconite every two hours. He began the treatment, in some instances, with 15 to 20 grains of calomel in one dose.

The Medical Treatment of Appendicitis.

Even allowing a considerable margin for possible errors in diagnosis and for fatal cases that may have been forgotten, Dr. Carpenter's success in treating appendicitis must have been most extraordinary.

And now comes Dr. T. J. Hutton, Professor of Diseases of the Nervous System in the College of Physicians and Surgeons, Chicago, and in a vigorously worded contribution to the *Medical Record* of December 17th, reports that in one hundred cases of appendicitis, he has not found it necessary to operate even once, though himself a surgeon, and has had no deaths! His method is to give calomel and soda boldly — $2\frac{1}{2}$ to 10 grains of each every hour for three or, sometimes, even four doses, following up with a saline purge if necessary — and to apply locally cloths wrung out of boiling water. He describes a number of severe and threatening cases in which he fully expected to be obliged to operate, but the calomel pushed to purgation cured them all and usually removed the serious symptoms within a day or two. When there was fecal impaction, he preceded or accompanied the other treatment by copious enemata, continuing these till there was a complete unloading.

In this connection it may be interesting to mention briefly some similar

clinical experience in our own practice. About ten years ago we began treating, by hot flaxseed meal poultices locally, cases of acute appendicitis, and, in addition, by small doses of calomel, gr. $\frac{1}{16}$ every one or two hours, followed by salines, when necessary, to open the bowels freely. During this time none of our cases have ended fatally, and two only have been operated on. One of these might possibly have yielded to a bolder use of the calomel. The other was not seen till in a late stage. We have within the same time seen one fatal case (in Atlantic City), but this was in the charge of the patient's family physician during most of its course, and the mercurial treatment was not carried out. An operation in this case was declined when first advised, and, when done later, proved unavailing. Under the treatment by calomel and poultices, begun early, we have seen many cases recover completely within four to five days. Unfortunately, we have kept no notes of the majority of the cases seen outside of our office, but should estimate the number in ten years at not less than fifty.

Dr. J. H. Kellogg, of Battle Creek, one of the ablest abdominal surgeons in this country, emphatically dissents from the view that early operative intervention is always best in this disease. An editorial, entitled "Don't Be in a Hurry to Operate in Suspected Appendicitis," appeared in a recent number of his journal, "Modern Medicine," and was presumably written by him. In this article are cited six cases, most of them so desperate that, in the opinion of the writer, an operation would have been almost necessarily fatal. All were saved by non-surgical methods. The treatment included hot enemata to unload the bowels, three times a day or oftener, with the addition to the water of turpentine and sulphate of magnesia in cases of obstinate constipation. Hot fomentations were applied every hour or two for fifteen or twenty minutes, followed by the application of towels wrung out of very cold water, and sometimes an ice-bag was kept on over the seat of pain between times. No medicines were given by the mouth.

It is noteworthy that in most of the fortunate experiences above summarized there was early and frequent, as well as thorough, emptying of the bowels; also that vigorous use was made of the unquestionably valuable sedative and resolving action of hot and moist local applications, and that in all the larger series of cases a mercurial in some form was used.

A great deal more will be known about therapeutics twenty years hence, and it is safe to say that there will be a much larger use in a safe way of antiphlogistic and eliminative measures than is fashionable now. Various theories and facts, such as the usual self-limitation of disease, bacterial influence, and the recent disastrous abuse of the coal tar antipyretics and of the newer hypnotics, have combined to discourage anything like an energetic use of many well-approved remedies, and in some of the medical centers there has been a drifting of late in the treatment of certain acute diseases toward expectancy. Naturally, this timid tendency of Medicine has afforded

an opportunity for Surgery, which was never more virile or self-confident than at present, to push forward aggressively toward the exclusive occupation of some still debatable ground, such as the treatment of appendicitis.

Such experiences as those of Carpenter, Hutton and Kellogg should encourage physicians who have been on the point of acquiescing in the new doctrine that every case of appendicitis is one for the surgeon from the very start, to attack the disease more energetically and hopefully with remedies which have proved so remarkably successful. Especially is this true when treatment can be instituted early; but whenever a case is not seen till it has already progressed to the formation of an abscess, or there are signs that one has formed in spite of the remedies, it is wiser to have a surgeon in attendance, thus dividing the serious responsibility, and affording greater hope of rescuing the patient in the event of a rupture into the abdominal cavity.

A wide distinction should be made between acute and chronic diseases as to their amenability to drug treatment. Chronic invalids are often better off with very little or even no medicine, relying upon hygienic, climatic and mechanical forms of treatment; but in many acute affections there is a golden time in the beginning when boldness in the use of the appropriate remedies may work seemingly magical results.

Prof. Turck's recent London lectures, embodying mainly demonstrations of his numerous ingenious instruments for the diagnosis and treatment of gastric diseases, appeared in the *Lancet* of January 28th, and an

**The Diagnosis of
Abnormal Stom-
achs.**

abstract of them will be found under the head of "Medical and Surgical Progress," in the present number of the *INTERNATIONAL*. Turck's "gyromele," or revolving sound, as now modified and improved, is a highly useful instrument, and the inventor finds it of very wide applicability. It was originally devised by him as a means of brushing or scraping from the stomach walls shreds of membrane or cell elements for the purpose of microscopic study, and in the hands of specialists it will possibly be employed chiefly in this way, since they have at hand for mapping out the stomach boundaries and stimulating the motor function of the viscus, other methods which for them are equally available, and in some respects more desirable. But it affords probably the simplest and safest means of obtaining specimens of the gastric mucous membrane, and the decision of the question whether an early stage of catarrh of the stomach exists or not, in a given case, must often turn upon a microscopic examination of such specimens. The coming physician, however, will be obliged to do a great deal more stomach work than is now considered necessary, and the gyromele, though it looks formidable, is an instrument which he can very soon learn to use to advantage. For those not very expert in percussion, it may afford the easiest of all the reliable methods of determining the size and position of the stomach. Hundreds of patients throughout the country are having

their stomachs regularly washed out — and often with marked benefit — by physicians who do not possess the special training required to ascertain in the usual way the boundaries of that organ, or to determine by a chemical examination of the character of the gastric secretion. In the case of these patients who have become accustomed to a tube, the gyromele could be introduced with scarcely any difficulty, and then, with an assistant to turn the crank, the position of the greater curvature could at once be determined by simply feeling through the abdominal wall the wobbling of the sponge-tipped distal end of the flexible cable. With a little more practice the position of the lesser curvature could be made out in the same way, and with a greater certainty, perhaps, than by any other method.

The INTERNATIONAL is essaying to teach the profession generally so much of the specialties as it is practicable and desirable to teach through printed discourses, and it must be insisted that at this end of the nineteenth century no person obscurely out of health (especially if there are present symptoms of disturbed digestion) should be subjected to a course of active medication until it shall have first been decided whether or not there exists a displacement or dilatation of the stomach. Either of these morbid conditions can now be readily diagnosticated, even without intra-gastric instruments in most cases. Both are apt to prove so harmful to the general health and so persistent when unrecognized or wrongly treated, and both are usually so manageable nowadays, sometimes with, and more often without, surgical intervention, that there is no excuse for overlooking or ignoring them, as is so constantly done.

In a recent issue of *Treatment*, a striking instance is related of the power of antitoxin to prevent the development of diphtheria after exposure to the infection. In an institution containing sixty children, one contracted diphtheria from an exposure while out for the day visiting a friend, early in February, 1898. The disease spread to the girls occupying the adjacent beds on either side of her. These three were all removed to a hospital, and no more cases developed till after their return in March. Numerous new cases then occurred, and the throats of the three convalescents were found to present diphtheria bacilli. By April 29th the disease had spread to a number of other children in the same dormitory. Then a protective dose of antitoxin was given to every child in the institution, and not a single new case developed thereafter.

The evidence would now seem to be sufficient to establish beyond question that antitoxin has a decided efficacy in preventing diphtheria, as well as in lessening the virulency and duration of the disease when the treatment is instituted early. It is noteworthy that, according to most of the observations, the earlier the administration of antitoxin is begun, the better are the results.

**The Prophylactic
Power of Anti-
toxin.**

Under the head of "Therapeutics," on another page, will be found the abstract of a paper recently translated by our assistant, Dr. Robin, from the Russian journal *Vratch*, describing a new and apparently highly-promising method of treating tuberculosis by hypodermic injections of cinnamate of sodium. The results obtained in a series of eight cases, in none of which could any change of climate, occupation, or mode of living, be made, were extraordinarily favorable. All the patients improved markedly except one, whose case was desperate, probably one of galloping consumption. The translation is from a preliminary report only, and the author is still investigating the subject.

A far more extensive study of the effects of preparations of cinnamic acid in tuberculosis has been made by Landerer, whose experience with the remedy has been embodied in a volume of over three hundred pages. In the *Press Medicalé* of January 7th this volume is fully discussed and the results of the author summarized. The latter gives the preference to sodium cinnamate or cinnamylate. It is dissolved in the physiologic salt solution and injected into a vein every forty-eight hours. Landerer begins with half a milligram of the sodium cinnamate and adds a milligram each time till a maximum dose of 25 milligrams has been reached. This is continued for four to six months, and then, after a rest of a month or more, resumed with the same dosage as at first.

Landerer claims that under this treatment all cases in the early stages get well. In a total of 119 cases, all those without fever responded favorably, being rapidly cured. Some of the cases having cavities are said to have recovered, and even the very advanced ones were greatly improved in general health as well as locally. Hectic fever and acute phthisis were not helped.

EDITORIAL MENTION.

THE Hunterian Oration at the Royal College of Surgeons of England will be delivered this year by Sir William MacCormac. The Prince of Wales has consented to be present on the occasion and dine with the college the same evening. It will be remembered that Sir William MacCormac was the consulting surgeon when the Prince was suffering, last summer, from a fracture of the patella.

A RECENT number of the *New York Medical Record* contained a communication by Dr. Einhorn on "Membranous Enteritis and Its Treatment." It was read before the German Medical Society of New York earlier in the winter and enjoyed the distinction of being quite fully discussed by an

unusually large number of able physicians, including Jacobi, Leonard Weber, Meltzer, Heitzman, Fraenkel and others. It is remarkable, also, that all these distinguished speakers agreed with the author of the paper in his explanation of the coincidence of marked nervous symptoms with the local phenomena of constipation, colicky attacks, and the passage of mucus moulded often into casts of the bowel. It was the unanimous opinion that a neurotic condition was the cause and the intestinal disease the effect. No one seems to have even suggested the possibility of a contrary relation, or that a disease of the bowel involving constipation, and the excretion of large amounts of mucus with many cylindrical cells, might cause sufficient auto-intoxication to result in nervous symptoms.

HOLLOPETER, in a clinical lecture reported lately in the *Medical Bulletin*, called attention emphatically to the fact that whooping-cough has not received the recognition that the gravity of the disorder requires. Though often neglected by parents and not quarantined by health boards, it is really a very dangerous disease in its later stages. Hollopeter believes we should have as stringent laws for the isolation and management of whooping-cough as we have for diphtheria or scarlet fever. He advises local antiseptic treatment, especially in the beginning, saying: "If we catch a case of whooping-cough in the catarrhal stage, then our treatment must be purely local, and, as long as we can attack the disease in its local habitation, we may hope to cut it short. I have in my mind several cases that were exposed to the contagion, had the catarrhal condition, had all the symptoms I have spoken of, and within ten days all of them vanished by the use of the hydrogen dioxid; in other words, recognizing the fact that these children had been exposed to contagion and had presented the usual symptoms of the earlier stage of the disease, I at once sterilized their naso-pharynx." Dobell's Solution and other antiseptics were also advised for local use. The lecturer recommended antipyrin and various other antispasmodic remedies internally, though he did not mention the infusion of chestnut leaves, which is one of the best of them.

A New Gastroscope. Professor Ewald exhibited, at the last annual meeting of the British Medical Association, a new form of a gastroscope devised by his assistant, Dr. Kuttner. It is composed of a series of segments forming an easily movable tube, which can be bent to correspond with the esophageal curve and passed into the stomach. Then it is straightened by turning a screw at its outer end. The other end of the tube contains an electric lamp and a prism, by means of which a picture of the stomach wall is reflected through a system of lenses at the outer end of the instrument. The picture is much magnified and rendered visible in the same manner as in a telescope.

BOOK-REVIEWS.

THE SEXUAL INSTINCT: ITS USES AND DANGERS AS AFFECTING HEREDITY AND MORALS. By James Foster Scott, B.A., M.D., C. M. New York, E. B. Treat & Co., 241-243 West Twenty-third Street. Price, \$2.

The author proclaims at the outset that his work was "intended primarily for laymen—not for women or boys." There is a certain amount of prejudice in our profession against books designed to instruct the laity concerning medical subjects, but this has always seemed to us wholly unjustifiable. It is certainly for the good of mankind that the knowledge of diseases—especially those which are infectious and avoidable—should be as widely disseminated as possible. And who should or could teach these things if not physicians? We should be almost disposed to criticise Dr. Scott for restricting the beneficiaries of his valuable instruction to men. The perils of promiscuous sexual indulgence, as well as the certain impairment of health, mental, moral and physical, which results from the practice of masturbation, need to be made familiar to boys as well as men, since it is often in early boyhood that the first false steps are taken. And women from the very age of puberty need to receive delicately-worded warnings on the same subjects. Both men and women will read books devoted to the discussion of sexual matters, and the majority of such books more or less covertly pander to depraved tastes. The book before us is pure and elevating in tone. Every parent would be the better for having read it, and no boy should be permitted to grow up without learning the vitally important lessons which it inculcates. While it is sufficiently popular in style to be intelligible and interesting to all, the large amount of medical knowledge conveyed is thoroughly scientific and up to date. Indeed, there are very few physicians in general practice who could not learn from it much of practical value to them in the diagnosis of gynecologic and venereal diseases. The book covers 436 pages, and is well printed as well as neatly and substantially bound.

A PRACTICAL HAND-BOOK ON THE MUSCULAR ANOMALIES OF THE EYE. By Howard F. Hansell, A.M., M.D., and Wendell Reber, M.D. Philadelphia, P. Blakiston's Son & Co. 1899. Price, \$1.50.

According to their preface, the authors have attempted discussion of this subject in language easily understood, and they have sought to avoid theoretic speculation, to emphasize methods that have stood the test of their own experience, and, without making a book of reference, to omit no important data that they consider trustworthy. A reading of this book shows that they have fully accomplished their object. From cover to cover the volume is full of sound reason and shows keen judicial mind and especial affinity for practicality. Although there are some minor points of difference from our own views, we pronounce the book a safe guide to follow in the treatment of oculo-motor anomalies. This is in marked contrast to some of the recent contributions in this field, the authors of which, in their enthusiastic advocacy of muscular imbalance as a cause of major neuroses, and of tenotomy as a cure-all, have brought distrust upon ultra-specialism in ophthalmology. Recent enthusiasts have uselessly refined the subject to the isolated study of individual muscles, that never have individual function. We are glad to say that the present au-

thors have broader views, and have studied the powers of adduction, abduction, supraduction and infraduction, rather than the separate muscles participating in these movements. We also bespeak for their plea for a rational nomenclature the attention of all ophthalmologic writers. We would prefer to see more prominent mention of astigmatism (irrespective of spherical defect) in the production of heterophoria. We believe that exophoria is more often present in myopia than in hyperopia, but we do not believe that myopia is the chief cause of exophoria (p. 101); and we have not found that orthophoria and esophoria are so very rare in myopia. We think that when there is 8° of exophoria for near that 3° prisms bases in before each eye are too strong for constant use (p. 110). We have often found that rhythmical prism-exercise will not only markedly increase the convergent power, but also dissipate the exophoria (p. 109). On page 97 there is a statement that practical muscular equilibrium varies from 2° of esophoria for near to 4° of exophoria for distance. We judge this to be an unintentional mistake. The authors have wisely noted the difference in record of the Maddox-rod test and the Stevens phorometer.

These few minor exceptions have not been uttered in a carping spirit, for the book as a whole is very reliable, and we unhesitatingly recommend it to those of our readers who are interested in this subject, with the hope that they will find, as has been our experience, that muscular imbalance often does not produce any symptoms other than responding to the tests, and that in many cases it never needs any attention other than the ametropic correction.

W. L. P.

MANUAL OF ORTHOPEDIC SURGERY. A Treatise on Deformities and Diseases of Joints and Bones. By Stewart LeRoy McCurdy, A.M., M.D., Pittsburg, Pa.

Orthopedic surgery is rapidly acquiring the dignity of a specialty. The marked advances of the surgical, and, especially, mechanical, treatment of various deformities, as well as the special training required for their early recognition, make it impossible for the general surgeon to master this branch successfully. This fact has been recognized by a number of medical colleges, in which a special chair for orthopedics has been established. But while the general tendency at present is toward specialization, there is, at the same time, a laudable endeavor on the part of the specialists to make the various specialties accessible to the general practitioner. This the author has accomplished in his excellent manual. "This book," he says, "is intended for the busy practitioner as an aid in diagnosis and treatment, and for the student who finds little time to pursue the larger works." Especially is it indispensable for the general practitioner to become familiar with the early recognition of various deformities, for it is here that an ounce of prevention is worth a pound of cure. "The least suspicion of deformity which might be observed by the parents and mentioned to the family physician must not be lightly or flip-pantly passed with the remark that 'They will grow out of it.' The rule is that they grow into a coarse deformity, and the family doctor who disregards the solicitude of parents is responsible for the outcome." The author has managed to crowd into this little volume all the information one needs to acquire without going into theories and scientific speculations. Everything of importance in the diagnosis and treatment is mentioned. Excellent cuts, tables and illustrative cases greatly enhance the value of the book to the physician. It is with pleasure that we recommend this handy volume to both the general practitioner and the student.

A. R.

HISTOLOGY: NORMAL AND MORBID. By Edward K. Dunham, Ph.B., M.D., Professor of General Pathology, Bacteriology, and Hygiene in the University and Bellevue Hospital Medical College, New York. Illustrated with 363 engravings. 493 pages and index. New York and Philadelphia, Lea Brothers & Co. 1898.

The book consists of an introduction and twenty-six chapters. Chapter I. deals with cells, and is satisfactory. Chapter II. considers the elementary tissues, is brief, possibly too much so. Chapter III. treats of epithelium, and includes endothelium, which, the author admits, should be classified with connective tissues. Chapter IV. deals with the connective tissues. It is quite satisfactory and fairly well illustrated; fig. 49 and fig. 50 constitute striking exceptions. Chapter V., dealing with muscular tissue, and Chapter VI., dealing with nervous tissue, are brief, but well illustrated, and, one may say, satisfactory. Chapter VII. is headed *Organs*, and occupies a little more than one page. Exactly why it is introduced is not apparent. Chapter VIII., on the circulatory system, and Chapter IX., on the blood and lymph, are fairly satisfactory. Chapters X., on the digestive organs, XI. the liver, XII. urinary organs, XIII. respiratory organs, may be passed over without criticism. Chapter XIV., on the spleen, is not up to the standard of the other chapters. Chapter XV., on the skin; Chapter XVI., on the ductless glands; Chapter XVII., on the reproductive organs, are fully acceptable. Chapters XVIII. and XIX., dealing with the nervous system, are fully up-to-date, but we think that separating the chapter dealing with nervous tissues by considerable over 100 pages from the chapter on the central nervous system, is not for the best.

The second part of the book, dealing with the histology of the morbid processes, is brief and fairly well illustrated. The chapter on histologic technic is acceptable, but very few laboratory workers will care to go to the German Pharmacopeia for formulæ. It is very much better to follow such writers as Arthur Bolles Lee, who gives workers formulæ by which one can make up stains and preparations, no matter in what country he may be working.

We are inclined to compliment the author upon his book and to say that we believe he is entirely in the right line. Every practical teacher knows that the student grasps Normal Histology best after a course in Morbid Histology, and that in medical schools the association of the two is of the greatest aid. For this reason we hope to see Prof. Dunham elaborate his book, a thing which every chapter shows his competency to fully accomplish. When we took up the book we hoped to find morbid conditions in organs considered with the normal organs, and we are still inclined to believe that this course would be advantageous.

DISEASES OF THE EYE. By G. E. de Schweinitz, A.M., M.D. With 255 illustrations and two chromo-lithographic plates. Third edition, thoroughly revised. Philadelphia, W. B. Saunders, 925 Walnut St. 1899. Price, cloth, \$4.00 net; sheep or $\frac{1}{2}$ morocco, \$5.00 net.

This popular text-book has been subjected to extensive revision and addition. While primarily intended for students and general practitioners, it has grown to such proportions as to thoroughly epitomize the best ophthalmologic literature for the specialist. In this latest edition particular attention has been given to the important relations which micro-organisms bear to many ocular disorders. The new anesthetics, eucaïn and holocain, are discussed. Röntgen rays for detecting foreign bodies in the eye-ball are highly recommended, and the method of using them is fully described. Certain chapters, such as Acute and Chronic Retro-bulbar Neuritis and Diseases of the Sinuses, in which the author is especially proficient, have been rewritten largely. A number of new illustrations have been added.

W. L. P.

SAUNDERS' POCKET MEDICAL FORMULARY. By Wm. M. Powell, M.D. Fifth Edition, thoroughly revised. Philadelphia, W. B. Saunders. 1899. Price, \$1.75 net.

Saunders' "Formulary" deserves its place in the estimation of those physicians who make use of such handy little reference books. Besides a large number of better ready-made formulas than usually find their way into print, it contains a full dose list, a table of incompatibles, the metric system of weights and measures, the strength of many useful gargles, doses of drugs for atomization, etc.; the pulse at various ages, the periods of incubation, and other useful facts about the eruptive fevers, the treatment of asphyxia by drowning, a very full and suggestive "Surgical Remembrancer"; a list of poisons and their antidotes, and the diameters of the female pelvis and fetal head, contributed by Dr. Richard C. Norris. There is, besides, a diet table for various diseases, and the book ends finally with a very full list of the drugs and materials used in antiseptic surgery. Indeed, to the uninitiated it might well seem as though, with the practice of medicine, surgery and obstetrics thus skillfully condensed into such a convenient form, prolonged study and experience were scarcely necessary to equip the physician for his work. Nevertheless they are.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. With 653 Illustrations. Philadelphia, W. B. Saunders. 1898.

Medical books are multiplying at such a rapid rate that it is proper to scrutinize each new candidate for favor, and ascertain if it have any good *raison d'être*. And yet an ultra-critical spirit in this respect is not desirable. When the author is at once a conscientious, earnest and trained observer and besides has had a large experience, it is scarcely possible for him to write a book which shall not contribute much of value to the sum total of our knowledge. The author and publisher have all to risk, the reading public nothing. For if the book does not prove useful, it need not be purchased and read. Obstetrics, upon a superficial view, would seem to be one of the most rigidly limited and least progressive of the special departments of science. All babies must travel the same crooked road when they come into the world, unless they take the short cut by way of the Cesarean section, and there are few new developments of value in the mechanism of labor; yet, looking back over a period of twenty-five or thirty years, some highly important advances have been made even in midwifery. Asepsis has proved as great a boon to the lying-in woman as to surgical patients. Puerperal fever has been robbed of most of its terrors, and our knowledge of extra-uterine pregnancy has been advanced remarkably by the brilliant achievements of gynecology.

All the newer developments in midwifery have been faithfully mirrored in this new book of Prof. Hirst. It is in every respect a very satisfactory work. It shows a thorough and intimate knowledge of the subject, and such a broad, comprehensive grasp of it as has enabled the author to present its important features in the way best adapted to the wants both of students and practitioners. Especially praiseworthy are the chapters on "The Diseases of the Fetus" and "The Physiology of Pregnancy." Both abound in new and very excellent illustrations, which are exceedingly helpful. The signs of pregnancy are nowhere more lucidly or graphically described. They are much more fully and accurately, as well as more artistically, illustrated than is usual in works on obstetrics. Nearly sixty pages are devoted to the subject of "Puerperal Sepsis" and this is

perhaps the most valuable chapter in the book, describing fully both by letter press and beautiful illustrations all the latest discoveries in the pathology and bacteriology of the structures involved, as well as the most recent and approved methods of treatment.

An almost unique feature of the work is embraced in Part VII., with which it closes. This is devoted to "The New-Born Infant," being divided into two chapters, the first of which describes the "Physiology of the New-Born Infant," and the second the "Pathology of the New-Born Infant," considered separately under the heads of the injuries and diseases of the same. The only possible peg which this admirable book seems to offer upon which to hang a criticism is the plan according to which the contents are arranged. It is a little confusing at first to find the subjects of labor and the puerperal state treated in two widely separated portions of the volume. Part II., under the general head of "The Physiology of Labor and The Puerperium," discusses first Labor and then The Puerperal State. Part III. contains an elaborate account of the Mechanism of Labor; Part IV., The Pathology of Labor, including Dystocia especially; and then in Part V. again is found a full account of the Pathology of the Puerperium. It would seem more natural to follow the usual plan of classifying these topics.

MANUAL OF CLINICAL CHEMISTRY. By Elias H. Bartley, B.S., M.D., Ph.G., Professor of Chemistry and Toxicology in the Long Island College Hospital, Dean and Professor of Organic Chemistry in the Brooklyn College of Pharmacy. Philadelphia, P. Blakiston's Son & Co. 1899.

This little book really fills a want. The author has compressed into 146 pages of rather finely printed matter more practical chemical instruction of value to the physician than any one ever has before. With such a reliable, intelligible, handy and inexpensive little volume (\$1) within his reach, there will be no excuse hereafter for any physician who fails to make at least the simpler tests of both the urine and stomach contents in all important cases. There are some minor details in which the book is open to criticism, the most noteworthy being the directions for taking up a test meal. Only the method of compression is described, and this inflicts upon patients an unnecessary amount of discomfort, which is wholly avoided by attaching to the end of the tube an exhaust bulb, in the shape of an enlarged Politzer rubber air bag.

THE MEDICAL NEWS POCKET FORMULARY FOR 1899. By E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. Published by Lea Brothers & Co.

This little book presents some new and very desirable features. It is much smaller in bulk than other formularies of its kind, thus offering a considerable advantage to the one whose pockets are not very spacious. Each prescription is accompanied by "indications" and other useful therapeutic hints. The front pages are devoted to tables of weights and measures, comparative scales, important compatibles, poisons and antidotes and doses. The number of prescriptions is quite complete, covering nearly all the diseases human flesh is heir to. The omission of the authors' names, which are usually attached to each prescription, is, however, a questionable policy. The publishers have not only made the book attractive, but have also reduced the price considerably.

MEDICAL NEWS AND MISCELLANY.

At the annual meeting of the Atlantic City (N. J.) Academy of Medicine, on Jan. 13, 1899, the following officers were elected: President, Dr. W. Blair Stewart; Vice-President, Dr. Wm. Edgar Darnall; Secretary, Dr. E. C. Chew; Corresponding Secretary, Dr. J. B. Thompson; Treasurer, Dr. Walter Reynolds.

Enlarged Prostate in the Old. In a personal examination of the prostates of 360 men over 55 years of age, the large majority being between 65 and 75 years, Dr. Johnson found 186 to have very perceptible enlargement of the prostate. In 65 there was urinary disturbance. In 56 the prostate was so large that it could not be outlined by digital examination per rectum. Of these 56, 14 had urinary disturbance constantly, such as dysuria, frequent micturition day and night, rectal and vesical tenesmus, retention at times, with residual urine and cystitis. In 210 the prostate was very perceptibly enlarged; 43 had urinary disturbance of a milder degree than those above mentioned. The right lobe was markedly more enlarged than the left in 7. Of the 7, 5 had urinary disturbance. The left lobe was also enlarged in 7, but had urinary disturbance. The middle lobe was slightly enlarged in 5. None complained of vesical distress. The prostate was found to be normal in 44. It was atrophied in 30. Of these 30, 2 had slight enuresis.

Vicarious Urination from the Leg. Dr. A. T. Rice reported, before the Ontario Medical Association, an almost unique case of a woman who was suffering from repeated attacks of cystitis accompanied by complete atony of the bladder. During the last attack the secretion of the bladder gradually diminished, but was compensated for by a transudation of fluid from the anterior portions of the lower limb, between the knee and ankle. This fluid was voided regularly three times a day, the average being 30 to 40 ounces daily. The fluid simply oozed from the skin without any abrasion being present. The patient would realize that the fluid was about to issue, and would place her feet upon a stool, with a vessel beneath the heels. The fluid was of an amber color, sp. gr. 1.010, had a strong smell of urine upon being boiled, with a distinct ammoniacal smell after standing, and showed the presence of uric acid. As the attack subsided, this transudation suddenly ceased, and the urine began to pass through the urethra.

Examination of Tuberculous Sputum in Children. The well-known difficulty in securing sputum from children for microscopic examination is overcome by Meunier by washing out the stomach of children suffering from suspected pulmonary tuberculosis, who, as a rule, swallow the expectoration. The washing is done in the morning, and, in the case of children, is accomplished with ease. The contents are then examined for tubercle bacilli in the usual manner.

An Improved Method for Finding Peptones in Albuminous Urine. E. Freund uses the following method: To urine which contains less than 0.1% albumin he adds 2 drops of a 10% lead acetate solution to each 10 c.c. of urine. This precipitates albumin, nucleo-albumin and protalbumin. The urine is then filtered and the filtrate tested by the Biuret method. Should the urine contain a larger amount of albumin (up to 3%), it is boiled, after adding 1 drop of a 20% solution of acetic acid, then neutralized with a few drops of a 20% solution of soda, and 2 to 3 drops of a 10% solution of lead acetate added. The filtrate is then free from albumin.

Overeating by Idle People. Dr. W. Ewart, of London, in the second of his Harveian Lectures on "Disease: Its Treatment and the Profession of Medicine in 1899," spoke as follows in the course of his remarks under the sub-head of "Physiological Rest to the Organs": "Partial physiological rest is much more easily applied in medical treatment, and we spend our lives preaching the lesson of moderation, but specially in the direction of the nervous and of the alimentary system. It is, perhaps, a redeeming feature of illness in general, but more particularly of enteric fever, when it strikes down the middle-aged man, that it affords his overworked nervous system a prolonged and timely rest. If the renovation of tissues which is one of the results of a consuming fever were an unqualified advantage, then the Lenten fast and the more extraordinary fasts of certain professionals might claim some foundation in science. More probably, however, the favorable result which is often observed in the convalescent from typhoid fever is the effect of the prolonged rest of many functions, including those of the stomach and of the liver, but more especially of the nervous system. When convalescence is happily conducted, the sufferer may find himself a new man, disencumbered and refreshed, with a more active stream of nutrition which reminds him of younger days. But we need no lesson from illness. Our treatment of the nervous system by rest is sufficiently confirmed by its results. Again, in connection with the alimentary system, the advantages of partial rest are evident, as in that wholesome cure for the prevalent results of abuse of food as a mere stimulant — an exclusive milk diet combined with rest in bed. Who has not been struck with the singular contrast between the frugal diet, often small in bulk, of hard-working laborers, and the weight and superfluous richness of that of the unemployed? With the latter the labor is visceral and the penalty as well, and their life is mainly shortened by this organic overwork of stomach, liver and kidney. In vain has modern fashion endeavored to lengthen the interval between meals by deferring the mid-day feast and throwing back the late dinner nearly to the hour which summoned our forefathers to bed. An additional afternoon meal has crept in between them, and the early cup of tea before rising also belongs nowadays to elementary hospitality. The least the stomach can claim is that its digestions should not overlap. Unfortunately, even its single opportunity, the long rest of the night, is too often encroached upon, and a meal of indigestibles thrown in at 12 or 1. Half this amount of food would keep a man in strong work; the idle, even if they be strong, must break down under its weight. Alone the dyspeptic is safe whose constitutional weakness acts as a merciful protection. Physiological rest in this direction is much needed."

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ORIGINAL PAPERS.

ON THE RELATION OF GOUT TO RHEUMATOID ARTHRITIS.

Abstract of the opening remarks to a discussion before the Northwest
London Clinical Society, on Feb. 15, 1899.¹

BY WM. EWART, M.D. (CANTAB.), F.R.C.P. (LOND.),

Senior Physician to St. George's Hospital and to the Belgrave Hospital for
Children; Joint Lecturer on Medicine in the Medical
School of St. George's Hospital.

THE leading note in my few remarks will be that the relation between gout and rheumatoid arthritis is rather accidental than essential, and that when the two affections happen to combine this conjunction is but one of the many varieties included under the broad heading of rheumatoid arthritis.

The relationship between gout and rheumatoid arthritis may be profitably considered from two points of view: the purely theoretic or pathologic aspect, including their etiology and their morbid anatomy, and the practical or clinical aspect, which is concerned with the natural history of the diseases, with their diagnosis and with the results of their treatment; and it is only from a joint study of all these aspects that we can hope to derive any true insight into the relation which may exist between them.

It would be impossible to deal systematically with so large a subject; but out of it arise a few definite questions to which I may at once venture to call your attention. I submit to you the following:

(1) Are gout and rheumatoid arthritis directly antagonistic, so as to exclude each other; or, are they capable of affecting the same subject?

(2) If they are not mutually exclusive, are they capable of actually co-existing; or, can they only occur at an interval of time in the same individual?

¹ Furnished by the author for publication in the INTERNATIONAL MEDICAL MAGAZINE simultaneously with its publication in London.

(3) If the relation is one of sequence rather than of co-existence, does rheumatoid arthritis pass into gout; or, is it gout which may lapse into rheumatoid arthritis?

(4) The remaining questions are those of diagnosis and of treatment, a discussion of which cannot fail to be of practical use.

THE PATHOLOGIC UNCERTAINTY AS TO RHEUMATOID ARTHRITIS.

Whilst gout, in spite of the obscurity of its etiology, is probably for all of us a sufficiently definite clinical unit, and whilst we are all probably agreed as to its material basis, I am not confident that under the name of rheumatoid arthritis we all recognize a thoroughly well-defined and uniform disease. Yet some general agreement as to the meaning of the term is essential.

Most of us have probably been struck with the variety of conditions included under that name, and with the number of theories which have been put forward, and this must incline us to suspect that we may have to deal not so much with different phases and with different presentments of a single disease, as with different affections, among which at least two, and probably three or more, separate diseases will ultimately be isolated.

Looking specially at the clinical aspects, I have long been impressed with a distinction between two sets of cases, the group of "gouty" rheumatoid arthritis and that of "rheumatic" rheumatoid arthritis; but I am willing to admit that this is too superficial and perhaps too exclusively clinical a division, which, moreover, deals only with a limited section. There is a larger section, comprising various types, which are neither gouty nor rheumatic.

The futility of former endeavors to explain all cases by any one theory has led to an attempt to split up the group and to contract the boundaries of rheumatoid arthritis by excluding the chronic senile monarthritic variety; and recently part of the group has been reconstructed on a bacteriologic basis.

You are probably all acquainted with the bacteriologic work of Bannatyne, Wohlmann and Blaxall. Max Schüller,² to whom we owe the earliest bacteriologic observations, now goes so far as to separate as a strictly infectious form of rheumatoid arthritis the villous affection of the synovial membrane, *polyarthritis chronica villosa*, which he has been able to produce experimentally in animals, and which he has treated successfully in man, both surgically and by intra-articular medication.

I need not point out that these infectious groups can present but little affinity with gout, and that further evidence must be forthcoming before we can admit that a bacterial origin has been proved in all the varieties. This

² Cf. Verhandl. des. XV. Congress fur Innere Medicin.

still leaves upon our hands the monarthritic varieties which are not senile, and two or three different types of the polyarthritic affection, besides the affections following upon traumatic, septic, gonorrheal, tuberculous and syphilitic lesions. And we may therefore still ask: What is rheumatoid arthritis?

The Characteristics of Rheumatoid Arthritis.

The definition of rheumatoid arthritis would have to be reduced to a very simple expression to fit all cases—that of the pale child with symmetrically swollen and shapeless joints, and, perhaps, as in the cases recently described by Dr. G. F. Still, with swollen glands; of the young adult with stiffened articulations and unbending spine; of the woman of mature years with Heberden's nodules and easily excited articular pains; and of the veteran whose longevity declares his original soundness, but who has long been crippled with a wasted and eburnated hip-joint.

In this long gallery of deformities, of which I have only mentioned a few, the chief common features are constitutional and local. Constitutionally, the affection is chronic and progressive when left to itself; it is a disease of depressed nutrition and of debility. Locally, it is also chronic and progressive if allowed to advance. Its lesions are not metastatic but permanently localized. They are essentially degenerative, with marked tendency to overgrowth. In varying degrees, according to cases, each of the constituents of the joint is affected, but more markedly, perhaps, the cartilage. But the cause of the degeneracy is not obvious, though its results are considerable. In this it differs from gout. And from the common forms of rheumatism it differs in all cases by the extent of the destruction and by the permanence of the lesions, in the monarthritic varieties by the strict limitation, and in the polyarthritic varieties by the symmetry, as well as by the number of the joints affected. There is also a greater tendency to an implication of the small joints as well as of the larger ones; whilst in acute cases the acuteness is less than in rheumatism and there is less profuseness and acidity of perspiration. The constitutional influence of the disease is not marked by visceral degeneracies, as that of the kidney in gout, nor so frequently by complications, such as those of the serous membrane and of the heart, as in rheumatism.

Thus, with the exception of the marked peculiarity of the degeneration, those pathologic features which are common to all cases are to a great extent negative and consist of nothing more definite than the permanent localization and the dystrophic character of the lesions. They point, in other words, to perverted local nutrition combined with constitutional debility and mal-nutrition, as the essentially rheumatoid characteristics.

The Theories.

Owing to this comprehensive broadness of type, considerable scope is given to our speculations as to the latent cause, and theories have been freely

supplied. To call the affection gout is pathologically out of date, though not always out of fashion. To regard it as rheumatism is a large postulate in face of many pathologic and clinical discrepancies; and we cannot forget that the etiology of rheumatism itself is a mystery. Some regard arthritis deformans as a form of senile decay, and others as the outcome of some traumatic lesion which has failed to recover, an explanation which is plausible only in the monarthritic cases. But these views hardly explain the early adult and especially the juvenile cases, and those cases in which no lesion can be found. Lastly, we have the more ambitious theories which seek an adequate explanation in some disordered state of the great agents of nutrition, the blood on the one hand and the nerves on the other. These are the neural and the humoral or toxic theories.

It is obvious that these theories cannot all be right; yet they represent the conclusions of thoughtful observers, and it may well be that none of them are absolutely wrong, but that they are partially, if not absolutely, applicable in different cases. The fact of the discrepancies between them is a strong argument as to the want of unity in the group of rheumatoid arthritis and also as to a possible co-operation of many factors in individual cases.

Rheumatoid Arthritis Viewed as a Morbid Result Rather than as a Disease.—The variety, almost amounting to opposition, in the theories as to the nature of rheumatoid arthritis suggests strongly that an attempt may have been made to describe as a disease that which may be essentially a result. If the familiar changes might be regarded as the progressive steps, varying freely in their individual developments, but agreeing in their terminal condition, of the non-suppurative variety of degeneration of joints, it would be conceivable that various diseases—gout, rheumatism, tabes, gonorrheal and other infections, as well as simple injury—might lay the foundation of the mal-nutrition in question.

There might still be room for the recognition of hitherto imperfectly-proven agencies, for instance, for the subtle influences of bacillary infection or of peripheral nerve affections, whether of a structural or of a functional kind, as direct causes for those varieties which are not manifestly connected with any constitutional disease or local factor, and are, therefore, classed as "spontaneous" or "pure" cases of rheumatoid arthritis.

We might, then, more easily reconcile the divergent theories because no longer claiming a pathologic unity for the clinical types. It might be possible to regard the trouble, sometimes, as essentially a tissue degeneration, and to this view correspond the suggestions of traumatism, senility, and disuse, as possible causes, and sometimes as a definite disease.

In dealing with rheumatoid arthritis *as a disease*, we should have to leave aside as incapable of any general application the theories of traumatism, of senile decay, and of pure gout, and to choose between three hypoth-

eses: (1) The neural theory, (2) the infective theory, and (3) the rheumatic theory, with its two chief modifications—the one being (a) that rheumatoid arthritis is a hybrid between gout and rheumatism; the other (b) that it is a systemic disease, distinct from gout and from rheumatism, yet possessing analogies with both. Or, if it had to be viewed as a substantial disease, entirely distinct from gout and from rheumatism, then only two adequate theories as to its production would remain before us—the neural and the toxic. In favor of both, substantial arguments have been brought forward. On the one hand, a strong point has been made by Dr. Ord of the frequent coincidence of the affection with uterine and ovarian troubles and with catamenial irregularity, amenorrhea and the menopause. This, he believes, indicates a reflex nervous mechanism of production. Arguments are also derived from the considerable wasting of the muscles, from the occurrence of peripheral neuritis, from the alteration in the myotatic reflexes, and from the close analogy of the articular lesions of tabes. On the other hand, a bacillus has been described by which a destructive toxin might be elaborated.

Considerable importance also attaches to the view put forward prominently by Mr. Macnamara,³ and, according to him, originally suggested by Todd, who ascribed certain joint affections to putrid discharges from the vagina, that the intoxication may be of a non-specific nature, viz., such as may arise from disordered metabolism or impeded excretion, or be due to poisons manufactured within the organism (such as ptomaines produced by suppuration), rather than to germs imported from without. Arthritis may be caused by “the passage into the blood of the chemical products of inflammation rather than to the direct entrance of the microbes into the affected joints.” Mr. Macnamara has made the further suggestion that decayed teeth may be in many cases the source of an infection to which the joints may react in a manner analogous to that which we observe in arthritis due to gonorrheal pyemia, scarlet-fever, and various other infections. The suggestions possess much weight and deserve our close attention.

It is noteworthy that one of the affections so well described by Dr. Still⁴ as apt to occur in a somewhat acute form in children, is stated by him not to develop usually before the period of the second dentition. This would coincide with the time of decay and absorption of the temporary teeth.

The Clinical Basis of the Theories.—The neural theory, and the humoral or toxic theory, have both appealed to the same clinical facts.

Thus the high tension and increased pulse rate, insisted upon by Kent Spender, the liability to palpitation noted by Duckworth, might equally be regarded as vasomotor agencies or as due to the action of irritating principles in the blood.

³ Cf. Proc. Re Med.-Chir. Soc., 3d. Ser., Vol. XI., p. 48. 1899.

⁴ Cf. Clifford Albutt's System of Medicine, Vol. III.

Catamenial irregularities, amenorrhea and the menopause, ovarian and uterine affections, mental shock, have all their neural and their humoral aspect.

The pigmentary changes pointed out by Kent Spender and the increased myotatic irritability are not constant phenomena, but they belong decidedly to the province of the nervous system.

General Etiology.—In dealing with the etiology, *predisposition* cannot be entirely disregarded. Rheumatoid arthritis does not present that directness of transmission which is a feature of gout. Indeed, we look in vain for that something which could be transmitted, unless it be a general liability to articular disease. An element of truth is probably contained in the popular view which credits certain individuals with a definite structural weakness of some one or other of their organs, be it weak lungs, or weak kidneys, or a weak heart. Morbid functional peculiarities may run along given lines of structural weakness, and whether we shift this supposed imperfection from the joints to a joint-centre, or localize it in the articulations themselves, there is some reason for admitting that a delicacy of the joints may be inherited. Gout and its associate diabetes, rheumatism, and phthisis, are among the most prevalent of our diseases, and we must be prepared to find them largely represented in the family histories of the rheumatoids; but there is significance in the fact made out by Sir A. Garrod that of these three influences, that of gout in the progenitors is by far the most frequent.

Vulnerability.—Without attempting to discuss the well-known but unexplained susceptibility of joints to the action of various morbid agencies, as, for instance, of gonorrhea and other infective poisons, we are almost led to assume a relatively increased vulnerability of the joints in the subjects of rheumatoid arthritis as an explanation for their unhappy reaction to influences of climate, soil, atmosphere and occupation, which leave stronger subjects unaffected. Other causes sometimes alleged: traumatism, disturbed internal mechanism of the joint or dislocation, paralysis, or prolonged disuse, will not of themselves produce the disease. Undue vulnerability must be called to aid before we can account for the alleged causations.

The vulnerability referred to is closely connected with the question under discussion, inasmuch as it might explain the late development of rheumatoid changes in joints as a result of previous gouty lesions without the intervention of any fresh and additional disease.

THE RELATION BETWEEN GOUT AND RHEUMATOID ARTHRITIS VIEWED FROM A BROAD STANDPOINT.

Enough has been said to justify a suspicion that the rheumatoid conditions do not form a homogeneous unit, but that they may result from various influences and assume different types of development. Since they have

always been described under one heading, the assumption is that they are kept together by a central, well-defined type which has served as the backbone of the entire group, and that it is to that type that the term rheumatoid arthritis properly belongs. This is the type specially considered in my present remarks.

Gout and Rheumatoid Arthritis Contrasted.—Had we been asked to discuss the relationship between rheumatoid arthritis and rheumatism, there would have been no difficulty in tracing many points of contact between them, and no lack of variety in the opinions which would have been elicited, for the question which this relationship involves remains to the present day one of the fundamental and most debatable questions in the pathology of arthritis deformans.

Between it and gout there is much less obvious affinity, and, at first sight, little to debate upon. Yet we are invited to take the matter under consideration. And since we must discuss it, we shall probably discover sufficient material. If I were asked to broadly define the relationship between gout and rheumatoid arthritis, I would state it to be one of contrast, not of resemblance. There is no relation between them. They differ from each other all along the line of clinical symptoms and of pathologic change—with the exception that they are both in their later developments deforming and crippling affections, and that some minor characteristics are common to both.

Constitutionally, they are most unlike. Rheumatoid arthritis, as its name implies, is nothing if it is not a local joint affection. It is apt to shorten life, but this is chiefly due to the deleterious results upon the general health of the antecedent crippling. Gout is not confined to the joints. Its most fatal results are largely independent of the local articular trouble, and are exerted directly upon the kidney, the heart and the blood-vessels, and sometimes also upon the visceral functions, independently of any coarse structural changes.

It would be rash to assert that there is not a constitutional *ens morbi* in rheumatoid arthritis; some peculiarities rather suggest that there is. But we are agreed that the *ens morbi*, if it exists, is much less prominent. And although future investigations may perhaps reveal its power of damaging the vital organs and functions, this power has hitherto been much less obvious, nay, even latent, and the field of its workings totally different from that occupied by gout. For instance, granular kidney and albuminuria, and atheroma of the blood vessels, which are the chief dangers of gout, do not form an essential part of the natural history of rheumatoid arthritis.

Moreover, we notice, at first sight, that the constitutional types attacked by the two diseases are in obvious contrast. The gouty, in general, are apt to be full-blooded; those who develop rheumatoid arthritis, weakly and anemic.

Clinically, the line of distinction is no less sharply drawn. Rheumatoid arthritis selects some of its victims at a relatively early age—with gout, pre-eminently a disease of middle age, this is exceptional. The female sex, which suffers much less often and much less severely from gout, contributes a large majority of the cases of rheumatoid arthritis.

The march of the two diseases is also singularly different. The onset of gout is commonly much more abrupt and acute, and confined to a single joint. That of rheumatoid arthritis, in perhaps its most common form, is relatively gradual and often insidious, and in the typical cases many joints suffer, and symmetrical joints are affected.

Pathologically, what do we find? In gout, sodium biurate is traceable in the joints and in their coverings as well as in the tophi. Nothing of that kind is to be discovered in the straightforward cases of rheumatoid arthritis, and an excess of uric acid in the blood has also been looked for in vain. Locally, the pitting and superficial ulceration of cartilages may be a relatively early event in gout. In rheumatoid arthritis, the early event is swelling and overgrowth of cartilage, destined in typical cases to be a permanent feature, but accompanied later by an extensive destruction of the hypertrophied cartilage and by a varying amount of ossification.

In the later stages some of the local results are analogous. Lipping of the cartilage is seen in some of the chronic cases of gout, and it is the rule in arthritis. Distortions occur in both, which, though essentially different, may sometimes present a rough resemblance. In gout they are due most often to the peri-articular thickenings which are apt to supervene.

Looking at the therapeutic side of the question, we discover no less marked a contrast. To climate, atmosphere, and soil, their reaction is almost identical, but in every other respect there is an opposition in the effects produced by medicines and other measures of treatment, and by diet.

I have endeavored to show that complete divergence exists between typical gout and typical rheumatoid arthritis, yet formerly they were included under one heading, until, at the beginning of the century, Heberden and Haygarth established the distinction. No serious effort has been made to revive the alleged identity between them. At the same time, the confusion which existed between them until 1805, and the fact that we are now discussing a supposed relationship, forcibly suggests that there is, if not in the diseases, at least in the appearances which come before us, some sufficiently marked outward resemblance. I believe that this resemblance is limited to what may be termed "borderland" cases, and that it has been magnified by the diagnostic perplexity to which they give rise; and it is this uncertainty bearing upon treatment and prognosis which adds so much importance to the subject under discussion.

Thus, whilst no confusion is possible between the two pure types, in practice our diagnosis is apt, nevertheless, to be sometimes difficult, and the

inference is that, as they come before us, the two diseases are not so purely typical as in our books. We might well put down this difficulty to our want of perception, were it proved that the two diseases were not only dissimilar, but antagonistic and mutually exclusive. But I venture to think that no universal antagonism exists. Although their general trend is in opposite directions, there is a borderland where they meet and sometimes even blend, and to these associations I shall now briefly refer.

The Types in Which the Two Affections are Associated.

(1) The inherited gouty proclivity which has been traced by Sir A. Garrod in a rather large proportion of the sufferers from rheumatoid arthritis, is doubtless one of the reasons which leads to the affection, in some cases, a gouty complexion—and this we expect to find in the female contingent.

(2) A more direct association is brought about, particularly in this country, as a result of the circumstances of the disease. The inactivity which it entails is but too likely to give scope to the climatic and dietetic agencies which tell upon those most susceptible to gout, and particularly upon males during middle life.

(3) But there is also a third group of those of yet stronger gouty tendency in whom the first event is asthenic gout at a relatively early period in adult life, and in whom a progressive failure of nutrition, or one induced by depressing agencies, may at a later period bring about the rheumatoid change.

(4) Then there is an important group, which has, perhaps, more than any other, influenced the nomenclature and the pathologic theories of rheumatoid arthritis in the direction of rheumatism. Some sufferers present a record both of gout and of rheumatic fever. In harmony with the age periods for the two diseases, we find almost invariably that rheumatic fever is the antecedent event, gout the late sequel. Many of these develop rheumatoid changes, and as applied to them the term rheumatic gout is specially appropriate. But it must be borne in mind that this is not a constant result.

We are thus furnished with four clinical types which agree in some very broad characteristics, and particularly in the symmetrical distribution of the lesions, but which present so much individual variety and gradation that it is impossible to isolate them from each other as strictly separate morbid types.

The most distinctly defined are that last mentioned, and that in which the production of Heberden's nodules in the digits is the chief and sometimes the only visible change, a type most commonly seen in women, the pathology and clinical significance of which are alike obscure.

The cases of early rheumatism with late gout usually present some unmistakably gouty characters by the side of the rheumatoid.

The second and the third groups are less easily defined, and it is in them that diagnosis is most commonly hesitating.

They may come before us under two varieties, or stages, the dry nodose stage, or the stage of effusion, and these call for different lines of treatment.

THE ACUTE ATTACKS OF GOUT AND OF RHEUMATOID ARTHRITIS COMPARED.

In both diseases we have to deal with acute attacks and with chronic developments. The acute attacks are, as might be expected, the most distinctive, and least likely to give rise to any confusion.

The acute attack of articular gout is characteristic, and I need not dwell upon its details, but merely point out that it is made up of an arthritic, of a nervous, and of a vasomotor local disturbance. Its most acute and painful symptoms seem to be due to the extra-articular changes, and particularly to the implication of the nerves and of the circulation.

The acute attacks of rheumatoid arthritis are much less uniform. They are generally regarded as rheumatic, and often mistaken at first for pure rheumatism. But closer observation will enable us, I believe, to distinguish among them two distinct types, as well as transitional or mixed forms. One of them more closely resembles acute rheumatism in the important feature that the affection is mainly *intra-articular*. These are the familiar cases of acute effusion occurring either at the onset, or as exacerbations in the course of the disease. The other form is *sui generis*, unlike rheumatism in many of its features and in the fact that there may be little effusion, but that there is, as in gout, obvious *extra-articular* disturbance and pain.

From the point of view of a possible relationship to gout, these painful attacks of the more severe type deserve our attention. In one respect they differ absolutely from acute gout. Instead of being sharp and short, they are apt to last almost indefinitely. They are generally treated as attacks of acute or subacute rheumatism. But the more sedulously anti-rheumatic methods are applied, so much the worse may the patient's sufferings become, and so much the more lasting the pyrexia. The aching, the pain, and the fixation of the joint are perpetuated instead of relieved by blankets, fomentations and medicines, and the case seems to be interminable. This peculiar behavior is diagnostic of this type, and affords the clew to the only successful treatment. The onset of amendment dates from the moment when the treatment is reversed, the sufferer allowed to lie in a cooler bed, and cold spongings and rubbings, so ill borne in acute rheumatism, applied to the joints and to the general surface.

It is significant that in some of these cases the joints present an erythematous aspect closely analogous to, yet not identical with that of the angry, patchy blush seen in cases of acute rheumatic arthritis. It is never, in my experience, capable of being mistaken for the shiny, puffy swelling of acute gout; but the question needs to be considered whether it is not more closely allied to the gouty than to the rheumatic erythema, though there is not any ground for supposing that a uratic factor has any share in its production.

In connection with the striking contrast between this form and the acute synovitic or rheumatic cases previously mentioned, there arises also the question whether this form is not more apt to attack those who may possess the gouty rather than the rheumatic tendency.

Closely allied to this variety, which is sometimes monarthritic and more often polyarthritic, are the acutely painful but apyrexial premonitions or early beginnings of local rheumatoid arthritis, so often mistaken at first for neuralgia or myalgia, and not infrequently for a gouty myalgia or neuralgia.

In all these varieties there are unmistakable nerve and vasomotor factors which should be kept in mind in any attempt to elucidate the pathology of rheumatoid arthritis.

THE CHRONIC FORMS OF ARTICULAR GOUT AND RHEUMATOID ARTHRITIS.

Great as is the variety of the chronic changes in gout, we find a yet greater variety in the chronic rheumatoid joint affections.

Pure tophaceous gout is from the first and always unmistakable, and any rheumatoid changes that may supervene never disguise the true nature of the affection. On the other hand, rheumatoid arthritis, in its extreme stage, is also sufficiently distinctive. It may be said that the further the rheumatoid degeneration advances, the greater is the convergence between its various types, until destruction of the cartilage and eburnation of the articular surfaces of the bone furnish us with an almost uniform end-product.

But before this final stage is reached, a series of phases are traversed, the exact nature of which may not be obvious. The family history, the clinical antecedents, and the general aspect of the patient may be highly suggestive of gout, but the joints themselves may present the characters of arthritis deformans.

On the other hand, there may have occurred undoubted rheumatoid changes, but with the lapse of time indications may arise justifying a suspicion that the patient has developed gout, and that gouty arthritis may be now associated with the rheumatoid degeneration.

Three types of chronic rheumatoid joints seem to afford room for some hesitation in diagnosis. They all occur at the gouty period of life.

In one of them there is a symmetrical swelling of the joints with effusion. I regard these cases as much more closely allied to rheumatism than to gout, and as belonging to the group which may be termed "rheumatic" arthritis deformans.

In the second variety there is symmetrical enlargement and deformity, but although there may be synovial swelling and peri-articular thickening, there is no effusion. Cases of this kind are sometimes regarded and treated as gout, in spite of there being no tophi, because the patients, chiefly males,

may present some gouty dyspeptic symptoms and an aspect analogous to that of asthenic gout. They are usually rheumatoid cases with more or less constitutional tendency to gout, and it is among them that we may look for instances of the "gouty" variety of rheumatoid arthritis.

Lastly, there is the large group, chiefly of women of mature age, in whom there has been and there is no obvious gouty arthritis, and in whom the rheumatoid changes may be limited to the development of Heberden's nodules and to slight and varying thickening of the wrists or other joints, but in whom, besides a strong gouty family history, there may be marked constitutional symptoms, such as are observed in chronic gout. In some of them the gouty tendency becomes more and more developed. Others, through careful living, remain free from articular gout. But many of them present at the same time a peculiar susceptibility to rheumatic influences from soil and climate. This, then, is a mixed group, and one specially calling for study from the point of view of the relationship between gout and rheumatoid arthritis.

There are other important varieties to which attention might have been called had time permitted: for instance, the painful monarticular rheumatoid affection of the hip with relatively slight deformity, in which a gouty family history or a gouty tendency in the individual may often be traced; and, again, the chronic rheumatoid affection with deformity—less frequently seen now than in the past—apt to follow in the train of gonorrheal arthritis. Hutchinson has insisted that it is peculiar to those who inherit a gouty bias.

DIAGNOSIS.

The importance of a correct diagnosis will be obvious when we come to the question of treatment and of diet.

If we admit that the joints in arthritis deformans are liable to gouty phases, or that the patients are liable to gouty states, we must be prepared to find considerable difficulty in correctly estimating the position at any given period in the history of the cases.

My previous remarks have indicated that the distinction between pure gout and pure arthritis deformans is not difficult, and I need not enter into the familiar details of the diagnosis. It is in the ill-developed forms that the uncertainty arises; and this may be best overcome by carefully watching the case and noticing the result of the various forms of treatment. The question is generally as to whether, where the rheumatoid changes are plainly marked, a gouty element is also present or not. But sometimes we may have to determine whether the deformity of the joints is not essentially gouty, the non-tophaceous variety of gout closely imitating the distribution and aspect of rheumatoid arthritis. For practical purposes, the diagnosis of these cases lies on the surface. The symmetrical implication of many joints declares the rheumatoid characteristic of inherent delicacy and of vulner-

ability of articulations, whilst the history and the general features and aspect of the patient may be so strongly gouty as to make it evident that the exciting cause of the arthritic changes must have been of a truly gouty nature. Cases of this kind present to us that association which exists more frequently than is commonly supposed, in which a gouty lesion may have been the starting-point of a rheumatoid arthritic change, or in which an early rheumatoid arthritis may have been fed up into gout. Had the case been straightforward, with creaking joints and a velvety moist palm, as in rheumatoid arthritis, no doubt would exist. But the palm may be as dry as that of gout, and the creaking may not be obtainable. In such cases, there is doubtless much of gout, in spite of the evidence of arthritis deformans, and it is reasonable to infer that the one condition has supervened upon the other. And, therefore, our diagnosis must take into account, besides the permanent changes of arthritis deformans, the fluctuating phases of gout.

TREATMENT AND DIET.

We need not enter fully into a description of the treatment of gout and of rheumatoid arthritis, but only so far as it bears upon the relationship between the two diseases.

In the first place, it may be stated that the treatment which is most beneficial in pure gout is that which is most detrimental for the worst cases of that form which we may term "pure rheumatoid arthritis," to which colchicum and alkalies would be almost poison, and low living the sure means of aggravation.

The relation between the two forms of treatment is thus one of direct opposition as regards their specializations. Yet there is a considerable basis common to both. Hygiene is essential to all classes of sufferers, but specially to those afflicted with chronic ailments; and *internal hygiene* is more particularly needed by all sufferers from joint trouble, whether this be gout, rheumatism, or rheumatoid arthritis—in addition to the essentials of pure air, light, and of a wholesome dietary.

Our difficulties begin with the management of the mixed forms. Where the indications are not absolutely clear, our action is, of necessity, somewhat tentative. In most of the cases to which reference has been made, there is, besides the rheumatoid basis, a suspicion of the gouty element. I believe that in many of these cases the best treatment is to *treat the rheumatoid arthritis* as thoroughly as this may be wisely done, and to be sparing with the more energetic remedies for gout. Our most important duty seems to be not to add in the slightest to the depressing conditions under which the rheumatoid patient is suffering. A much less evil would be temporarily to increase his gout. But even this need not occur if our treatment be happily conceived.

There is one direction in which the treatment of both affections can be carried out with safety and benefit, almost irrespective of their special char-

acters. I refer to the local measures of relief to the joint. We are now provided with additional and most effectual means of local treatment. It had long been noticed that the old-fashioned balnear treatment, which is often most serviceable in gout, led to very imperfect and often detrimental results in rheumatoid arthritis; I mean the treatment of the patient by prolonged immersion in a hot bath. The same debilitating effect would result in some of the mixed varieties of rheumatoid arthritis, in spite of their gouty complication. The general balnear treatment had, of late years, been abandoned in all such cases for the more local measures of steaming, hot douching, and massage, applied more specially to the joints affected, and our chief success had hitherto been derived from this method. We are now provided with various means of treating the joint by dry heat up to very high temperatures. The careful application of these new methods, graduated to each case, will enable us to feel that a great deal is done for the joint, whilst no possible harm is suffered by the patient, whichever be the stage of his articular complaint.

Dr. Levison, in a most interesting article, has provided us with suggestions as to the diagnosis between rheumatoid arthritis and gout by the X-rays, and as to the treatment of the gouty joints by the electrolytic method. Thus electricity, which had long been known to be of considerable use, whether in the shape of the electric bath or of the constant current directly applied to the limb in cases of rheumatoid arthritis, has now found a yet more direct application in gout, since it addresses itself to the removal of the material which is the source of local irritation and pain.

Meanwhile, internal treatment of such cases may be carried out on lines conformable not only to some of the obvious indications, but also to theories which are in some respects divergent. The abundant use of water as the means of accelerating excretion of waste products and of all forms of toxins, and assiduous attention to the activity of the bowels, are clearly desirable in gout and in rheumatoid arthritis, and fulfill the indications claimed by the neural as well as by the humoral theory as to the latter.

In mixed cases occurring in mature age, it may be best not to complicate the position by any vigorous tonic treatment, nor even by the iodid of iron, which has found so much favor since first advocated by Sir A. Garrod, which is admirably suited to the uncomplicated form witnessed in children and young adults. There may, nevertheless, be room for the administration of arsenic in small doses, and of sulphur, in addition to the purgatives. These have also been largely prescribed by the same authority before the more recent ideas concerning the septic origin of rheumatoid arthritis had been set forth. It may be said for arsenic that, in addition to its antiseptic properties, it must approve itself to those who regard arthritis deformans as conditioned largely by disordered nervous function.

Those are some of the general lines upon which doubtful cases may be treated safely and with the promise of much benefit.

Reference has been made to the acute and painful forms of rheumatoid arthritis, frequently monarticular, in which an inherited gouty proclivity or an acquired tendency to gout may be a factor. As previously suggested, treatment comes to the aid of diagnosis in these puzzling cases. Anti-rheumatic remedies and methods of treatment are harmful, and there is a positive intolerance, though this is not always obvious to those in charge, nor even realized by the patients themselves, for the ordinary heat of the rheumatic bed. Let this influence be removed, and they are immediately benefited. I regard this variety of complaint, long ago described as an affection *sui generis*, and successfully treated by Dr. Fuller, as a special form of rheumatoid arthritis with predominating vasomotor type, and in treating it I am impressed with the necessity of addressing the treatment to the vasomotor system. The best way to do this is the application of heat or of cold. Whilst we had remained restricted to the former thermal methods, treatment by heat had often failed, and the application of cold had been found, in some cases, to be the only successful method, after trying in vain the use of hot sponging, or even of the hot-air bath. Now that different methods are available, it is conceivable that cases of this kind, although refractory to ordinary heat, may be relieved by the heat cure, and derive considerable benefit from the high temperatures generated in a dry atmosphere by electricity, and by other means, as they certainly do from cold applied locally.

The *general* and *medicinal* treatment of this special form must vary with the individual characteristics of the patient, but in the average case most advantage would be gained by our disregarding indications derived from a mistaken diagnosis of rheumatism and by our not being deterred by the gouty family history or personal antecedents from endeavoring to raise the general strength of the patient. This practical view would also meet the indications suggested by any toxic theory which might be entertained by some preference to the neural and vasomotor theory.

The antiseptic treatment by the internal administration of creosotes, phenols and naphthols, recommended by Bannatyne, and the local germicidal intra-articular treatment by means of iodoform, carbolic acid and other germicides, practiced by Max Schüller, are too important to be passed altogether unnoticed, but they are specially intended for the infective form of the disease, and they have not, so far as we know, a direct bearing upon the subject of our discussion.

Lastly, we come to the questions of *diet* and of *alcohol*, the answer to which is foreshadowed in my previous remarks. The rheumatoid patient needs, above all, to be fed, and wine suits him well; but if he should turn gouty, we cannot disregard his gout. It is pre-eminently in this connection that the practical purpose of this discussion is revealed. How to diet the patient and whether or not to allow him alcoholic stimulation, are points not to be safely decided except on the strength of an accurate diagnosis, not

only of the general character of the case, but of its special phase. In doubtful cases there is probably more rheumatoid arthritis about the patient than gout, and I am in favor of the policy which I have indicated in my remarks on treatment, of running the risk of a slight gouty exacerbation rather than of incurring the reproach of intensifying the depression and debility inseparable from the rheumatoid state. The gouty element, if present, may, however, restrict the choice of the stimulants to those more suited to gout, whereas, in uncomplicated rheumatoid arthritis, particularly that of the young, the prevailing anemia calls for a supply of the red wines. In both cases the delicacy of the digestion has always to be borne in mind, and it is equally essential that the diet should be easily digestible and that it should be sufficiently varied and nutritious.

DILATATION OF STOMACH, WITH ESPECIAL REFERENCE TO ETIOLOGY AND TREATMENT.¹

BY JOHN A. LICHTY, M.PH., M.D.,

THE term, "Dilatation of the Stomach," has, of recent years, been surrounded by considerable obscurity. Nearly every writer upon the subject has found it necessary to give his own definition and classification, which usually differ only slightly from those of other writers. This is unfortunate, for much of the literature has thus been devoted to nomenclature, and comparatively little to other divisions of the subject, especially etiology and treatment.

It is thought best not to speak of the treatment of dilatation of the stomach without referring very particularly to its etiology, because dilatation of the stomach is considered in this paper as a secondary condition, a symptom, and not a disease.

The classification of this condition which seems most satisfactory is that given by Pepper and Stengel in a valuable paper upon "Dilatation of Stomach."² In this paper they speak of atonic dilatation, and obstructive dilatation. These terms define themselves. They include all forms of dilatation and atony of the stomach. They are in accord with the opinions expressed by Ewald in his very comprehensive lecture upon "Insufficiency, and Dilatation of Stomach."³ In this lecture, though he gives no classification, he speaks of the causes as being pyloric obstruction and atony of muscles. They are also in accord with the classification of Riegel and Boas, who speak of:

¹ Read before the Ontario Co. Medical Society, Canandaigua, N. Y., Jan. 10, 1899.

² See *Amer. Jour. of Med. Sciences*, 1897, Vol. CXIII., p. 34.

³ *Die Mageninsufficienz und Magenerweiterung, Krankheiten des Magens.* Ewald.

1. Simple gastric atony, or motor insufficiency, or myasthenia without dilatation.

2. Atonic dilatation without pyloric stenosis.

3. Secondary dilatation (motor insufficiency due to pyloric stenosis).

Pepper and Stengel include the first division of this classification under the term of atonic dilatation, and rightly so, because simple atony is only the very beginning of atonic dilatation, and should no more be considered an entity than the epistaxis in beginning typhoid should be considered a distinct form of typhoid fever. Such terms as "stagnation" and "retention," which have been introduced more recently to represent stages of the first division, or the simple gastric atony of the Riegel and Boas classification, are considered equally unnecessary, as they simply present successive stages in atonic dilatation.

In this paper, *atonic dilatation*, in its broadest sense, will be considered with special reference to its etiology and treatment.

For the purpose of study, the causes of atonic dilatation may be divided into two groups. The first group includes the *direct*, or *mechanical causes*; the second, the *indirect*, or *nutritional causes*. Clinically, however, this classification is of little consequence, for rarely will it be found that a dilated stomach is due to a single cause, or that the causes may even be found under a single group.

Under the direct, or mechanical causes, may be discussed:

1. *Too bulky meals.* Too much food is taken at a single meal. This is not always because the individual is so very hungry, but because such a large variety of food is furnished for each meal, and the appetite is over-stimulated. At the same time, an excess of fluid is taken, adding greatly to the weight of the food ingested, as well as interfering with the process of digestion.

2. *Rapid eating*, or bolting of food. An individual who eats rapidly takes more food than is necessary, does not masticate it well, and uses an excessive amount of fluid, either water, milk, tea, coffee, or alcoholic drinks, to hasten the disposition of a meal.

3. *Certain diseases of the stomach*, such as chronic gastritis. In this condition, the food remains longer in the stomach than normal, fermentation takes place, gases are evolved, and the stomach is distended.

4. *Abdominal tumors and pregnancy.* These conditions distend the abdominal walls. When the tumor is removed, or after labor, the abdominal walls being relaxed, the stomach is not supported as before, and dilatation takes place.

5. *Chronic constipation.* The colon being heavy with large masses of feces, considerable tension is brought upon the greater curvature of the stomach, which tends to dilatation.

6. *Constriction of waist by too tight, and suspension from waist of too*

heavy, clothing. Many women (and some men) wear tightly-laced corsets, which are supposed to give the body a more natural and graceful shape. Thus the organs are pushed out of shape. The abdominal muscles are put in splints, so that from disuse they soon lose their tone and strength, and fail to afford the normal support to the stomach. The mischief done by the corset, and moderate lacing, however, is not nearly as great as that which results from suspending heavy clothing from a waist which has no support and stiffness. The constriction and weight of heavy skirts, worn over the ordinary corset waist, produce a great amount of tension and dragging down upon the abdominal organs.

It is said by some writers that sometimes the small omentum is unusually short, and the pylorus holds a higher position relative to the fundus than normal. The increased resistance to the passage of food into the duodenum, thus produced, tends to dilate the stomach.

Under indirect, or nutritional, causes, may be considered:

1. *Worry, anxiety, and overwork*, either mental or physical. When food is taken under such circumstances, digestion is often retarded, and sometimes entirely absent. Not only the secretory, but also the motor, function of the stomach is impaired, and the stomach becomes dilated.

2. *Neurasthenia.* There is scarcely any doubt that this neurosis is nearly always accompanied by faulty nutrition. The patient eats, but, under the severe nervous and mental strain, does not digest or assimilate sufficient nourishment to maintain normal strength or body weight. Worry is the initial cause more often than overwork. This impedes digestion and assimilation. The highly-organized nervous system soon feels the lack of nutrition, and then the fatigue neurosis manifests itself, which again reacts upon nutrition, and thus a vicious circle is established. The nervous energies are remorselessly continued, and reserve strength is steadily expended. The patient says she is "living on her nerve." She would be nearer telling the truth if she were to say she is living upon the fat of her abdomen. The fat tissue which is so essential to support the organs and hold them in a position best suited to perform their functions is used up, and the organs begin to sag. The stomach, besides becoming dilated, is often associated with the other organs in a general enteroptosis. In a paper which I read before this society a year ago, upon movable kidney, the subject of faulty nutrition was considered with some detail.⁴

3. Certain diseases of the central nervous system, such as tabes, multiple sclerosis, etc.

Atonic dilatation may follow as a result of febrile diseases, especially typhoid fever.

Anemia and chlorosis are mentioned by some writers as causes of atonic dilatation, while others speak of these blood conditions as the result of dila-

⁴ See *Phila. Med. Jour.*, May 14, 1898.

tation of the stomach. There is no doubt that these conditions are frequently associated, but their causal relation is rather uncertain. It would seem to me that their early association is a coincidence, but later in the course of each condition the other may occur in a secondary relation.

The pathology, and especially the symptomatology, of dilatation of the stomach are so thoroughly and minutely considered by Prof. Ewald, in his published lectures on "Diseases of the Stomach,"⁵ that it would seem useless for me to attempt any addition.

The diagnosis has, also, been especially considered by Drs. Pepper and Stengel, in a published article, referred to earlier in this paper. These authors have considered minutely the methods of determining the lower curvatures of a dilated stomach, but have said very little of the motility and chemistry of the stomach. While a knowledge of the exact position of the lower curvatures is essential, it is not all which is involved in making a diagnosis. Dilatation of the stomach, when it is considered simply as a symptom, must be associated with the symptom group which reveals the underlying disease, before its diagnosis, or recognition, can be of any clinical value. To make a diagnosis which will be of any value, therapeutically, both the chemistry and motility of the stomach must be considered important factors. Not many years ago, all study was directed to the chemistry of the gastric juice; later, the size and motility of the stomach have been receiving the most attention. Neither of these factors can be safely ignored.

The normal position of the stomach, as described by Luschka, is as follows: "The pylorus lies in the angle between the right border of the xyphoid and right costal cartilages. The lower border lies well above the umbilicus, and the fundus lies beneath the base of the left lung, and is almost covered by its projecting margins."

Deviation from the normal size and position can be readily detected by inflating the stomach through a tube with a rubber bulb. The succussion splash also affords important information in reference to size and position, but more expressly in reference to the tone and power of the muscular walls. The use of the stomach tube is necessary to obtain the information which the chemistry of the gastric juice furnishes.

It is not within the scope of this article to refer intimately to diagnosis. In passing, it may be well to add that it is important to distinguish between gastropptosis and atonic dilatation. A knowledge of the exact position of the pylorus will enable one to differentiate between these two conditions. Gastropptosis is sometimes associated with dilatation.

The treatment of dilatation of the stomach may be divided into: (1) Hygienic, (2) Dietetic, (3) Physical, and (4) Therapeutic.

1. *Hygienic.* The role which tight and heavy clothing, suspended from the waist, plays in this condition has already been referred to. *All*

⁵ See *Krankheiten des Magens.* Ewald.

clothing must be worn loose, and suspended from the shoulders. This cannot be accomplished by putting the abdomen and chest into splints (a corset) and then fastening the heavy skirts to the corset. Neither can it be accomplished by using the ordinary commercial corset waist, and having the tight belts of the skirt buttoned to it. This last contrivance is a snare and a delusion, and intended to relieve a woman's conscience rather than the abdominal organs from pressure. Usually, when asking one of these patients with dilated stomach in reference to the way she wears her clothing, or if she wears a corset, she will either say, "Yes, I wear a corset, but very loose"; or, "No, I wear only a corset waist, and suspend my skirts from the hips."

After considerable study and experiment, I have found a plan which I can, unhesitatingly, recommend to these patients. I ask them to wear union undersuits; instead of a corset, or a corset waist, I have them put on a waist fitted by a dressmaker, specially instructed; this waist being so made that when a skirt is buttoned to it, the weight is really thrown upon the shoulders. To accomplish this, three points must be observed:

First.—The goods, which is usually white drilling, must be so cut that when the skirt is fastened to it, the weight will be in the direction of the weave of the goods and not diagonal to it, as it is in the corset waist of the shops.

Second.—The waist must fit exactly to the shape of the body, with sufficient room for respiratory expansion.

Third.—The buttons for the attachment of the skirts must be so high that when the necessary weight is thrown upon them, they do not pull below the line of the smallest circumference of the patient's waist.

To such a waist, both the petticoat and the dress skirt are buttoned. The belts must be comfortably loose. Over this waist, the ordinary dress waist, or a basque, is worn, loose, but neat, and not hooked to the skirt below. During cold weather, instead of adding an underskirt, knitted woollen tights of desirable weight should be worn. Such a combination will afford comfort, and, at the same time, permit the most fastidious to comply with the varying fashions.

These patients frequently go to sanitariums, where the life is such that tight dresses cannot be comfortably worn. They wear wrappers, and spend much of their time lying down. Improvement, if not entire recovery, takes place, and they return home, where they again put on their unhygienic clothing, and in a short time relapse to their former miserable condition.

2. *Dietetic.* In dilatation of the stomach, one must contend with the unfortunate circumstance that the very organ which is needed most to hasten a recovery is seriously disabled.

It is essential, if the patient is below her normal weight (and this is nearly always the case) that she should regain, or go above, her normal

weight. The abdominal organs must be in part supported by the normal amount of fat which is found in the abdomen in health. I know of no one food which will restore this more readily than milk in definite quantities at regular intervals.

I am aware that a liquid diet in dilated stomach is contrary to the teachings and writings of many for whose opinions I have the greatest respect. They tell us "a modified dry diet, concentrated, with meals at long intervals, coarse vegetables, and, if necessary, nutrient enemata, so that the stomach may have very little weighty material, and have long periods of rest." I have never yet succeeded in getting these patients to gain in weight upon such a regime. If one adopts the dry diet, and also has the patient take as much water as one in health ought to take in a day, I dare say the weight of the food and water will be equal to the weight of the milk necessary for one day. But these patients need to take *more* fluid than a healthy individual, because they nearly all suffer from partial anuria, are constipated, and in a condition of auto-intoxication.

I have had very satisfactory results in many cases by giving these patients two glasses of good, rich milk, with two raw eggs at meals, say at 8 A.M., 1 P.M., and 6 P.M.; and two glasses of milk at 11 A.M., 4 P.M., and 9 P.M.; sometimes giving an additional glass at midnight, or early in the morning. After these meals and lunches, the patient is required to lie flat on the back, or on the right side, for a period of thirty to forty minutes. I do not see that there can be any danger of aggravating an existing dilatation when the patient follows this course, for the weight of the food is not exerted against the lower curvature of the stomach, but against the posterior wall, which is well supported by the underlying tissues.

With such a diet, the kidneys become very active, the bowels often become regular, and the patient gains in weight. When the patient regains the normal weight, a meal of solid food is allowed at 1 P.M., consisting of a mutton-chop, and zwiebach, with about four ounces of water, and for the four o'clock lunch are substituted about twelve ounces of water. The other meals and lunches remain the same. If, after a week of experience with the mid-day meal, the patient holds her weight, a meal of solid food is ordered for breakfast, much as the mid-day meal, with the addition of a well-cooked cereal, and to the dinner are added green vegetables and soft-boiled eggs. The patient is advised to eat butter freely. Thus, gradually, the patient is given three meals of solid food a day.

What of the patients who cannot take milk or raw eggs? There are many who think they belong to this class, but it is surprising to see how few really suffer from such an anomaly. The usual opinion is that there is too much acid in the stomach and the milk is curdled. From a careful study of the chemistry of the gastric contents, and observations upon the effect of milk in a number of cases, I have found that patients with hyperacidity are more likely to take milk without discomfort than those who

have an absence of acid. A most decided case of hyperchlorhydria took milk easily, while one of achylia gastrica could not take it at all.

It is not well to continue one diet with these patients too long. After ten days or two weeks of milk and raw eggs, it is well to have the patient take plain water for ten or twelve hours, equal in amount to the milk which would have been taken during the same time. After this, the milk is again resumed.

All foods which are likely to cause fermentation must be avoided. Among these are potatoes, rice, and white bread. Raw fruit and an excess of sweets and fats must also be avoided.

3. *Physical.* Under this are included massage of the abdomen; certain exercises intended to develop the abdominal muscles; faradic electricity applied to the abdomen, and alternate hot and cold packs, or alternate hot and cold douches applied to the abdomen.

The application of electricity in these cases has been a question upon which there has been a diversity of opinions. Physiologists have proved that it is impossible to cause a contraction of the muscles of the stomach by the external application of the electrodes of a faradic battery, but that if one electrode is applied intra-gastrically, and the other over the abdomen, the muscles can be contracted at will. This has led to the use of the intra-gastric electrode. If the chief end of the application of electricity to the abdomen in these cases is to cause a momentary contraction of the muscles of the stomach, the intra-gastric electrode ought to be of the greatest value. But more than this can be accomplished with faradic electricity in these conditions. The tone and strength of the relaxed muscles of the abdominal walls can be increased, and I believe that the digestion and assimilation of food can be increased. Gynecologists, especially those who employ electricity, claim that they can alter tissues in the pelvic organs by applying electricity, percutaneously. If this is true, would it not seem reasonable that electricity, applied in the same way, would, at least, alter the delayed functional activity of the stomach and bowels? I have used faradic electricity percutaneously, and have obtained very satisfactory results.

4. *Therapeutic.* There are several drugs which can be used to great advantage in the treatment of atonic dilatation. Among these, the tincture of nux vomica can safely be said to take first place. Strychnin may be equally effective. A combination of the sulphate of quinin and strychnin is often very good. If there is diminished HCl in the gastric juice, small and frequently-repeated doses of HCl are beneficial after the meals of solid food. If there is an excess of HCl, a combination of sodium bicarbonate, calcined magnesia, and bismuth subnitrate can be administered to advantage.

If the constipation is not relieved by the hygienic and dietetic measures, and by the massage, the electricity, and the physical exercises to which reference has been made, glycerin suppositories may be used. Fluid extract

of cascara sagrada, with tincture of belladonna and glycerin, may be given in small doses, if the suppositories are not effective.

The prognosis in these cases is good if the physician can have full control of the patient. Often the symptoms will disappear long before the stomach resumes its normal size. To illustrate the good results which may be obtained with these patients, I report, briefly, two cases.

CASE 1. Mrs. A. V. H., aged fifty-four years, married. Complains of stomach trouble of three years' standing. Manifests itself by distention of the abdomen after meals and eructations of a sweetish, sometimes irritating, gas about three hours after meals. Is hungry, but eats very little on account of distress following meals. Bowels are obstinately constipated, move only with cathartics, or large enemata (two to three quarts). Sometimes bowels do not move for three days or a week. Has prolapsus of the rectum, for which a support is worn. About every tenth day has a headache, which begins back of the eyes, and is accompanied by nausea; sleeps poorly; takes ten grains of sulphonal every night; has night-sweats at times; feels very weak and miserable.

Has usually been well; two years ago had nervous prostration, from which she thinks she partially recovered. Has passed the menopause.

No history of any hereditary disease.

Physical examination.—Is pale and somewhat emaciated. Weight is ninety-five pounds; maximum weight, 120 pounds, three years ago.

Eyes.—Has a cataract of both eyes.

Tongue.—Clean and smooth.

Chest.—Heart is normal; pulse, 92; lungs, normal.

Abdomen.—Very flabby. Stomach dilated to two inches below the umbilicus, and full of gas. Right kidney movable. The uterus is retroverted.

Urine.—Scant; specific gravity, 1.027; reaction acid +. Some uric acid crystals; strong reaction of indican.

Blood.—Hemoglobin, 85%; red blood corpuscles, 4,888,000.

Stomach contents.—One hour after an Ewald test breakfast, free HCl, 12; total acidity, 60; lactic acid, absent; erythrodextrin reaction rather weak; starch cells pretty well digested; curdling principle active; white of egg digested in twenty-five minutes.

The diet which has been suggested in this article was prescribed, and proper hygienic measures were adopted. Faradic electricity, general, with especial reference to the muscles of the abdomen, was prescribed, besides massage, Swedish movements, special physical exercises to develop muscles of abdomen and chest, and salt rubs. Strychnia sulphate, gr. $\frac{1}{30}$, was given three times a day. For the constipation, fluid extract of cascara and glycerin were prescribed.

At the end of three weeks, the bowels moved without assistance, and sleep was natural, the sulphonal having been gradually diminished. At the

end of eight weeks, the patient weighed 125 pounds, a gain of twenty-five pounds. Solid food was given for the mid-day meal, followed by diluted hydrochloric acid. At the end of thirteen weeks, the patient weighed 125 pounds; had no distress after the three solid meals a day; bowels were regular; the support for the rectum was no longer needed; the right kidney could not be palpated; the stomach was distended only slightly; sleep was normal, and the patient felt perfectly well.

CASE 2.—Mr. C. C. W., aged forty-four years, single. Five months previous to his first visit to my office, he began to have "gas in the stomach," which appeared from one to three hours after meals, and was tasteless. Has distention of abdomen at times. Bowels are constipated. He also has palpitation of the heart, is nervous, and, at times, much depressed; feels weak and languid, and spends most of the time in his room.

Twenty-five years ago, while at college, he had a similar attack, only not so severe. Seven years ago, after an attack of la grippe, he had a nervous breakdown. He comes from a neurotic family.

Physical examination.—Is pale; weight, 127 pounds; maximum weight, 165 pounds, twenty years ago. Two years ago weighed 150 pounds. Is nervous and depressed.

Tongue.—Coated and flabby.

Chest.—Pulse, 88, occasionally intermitting. No valvular heart disease. Lungs normal.

Abdomen.—Stomach dilated below umbilicus about one inch. Abdominal muscles flabby.

Urine.—Specific gravity, 1,020; reaction, acid; indican not marked.

Blood.—Hemoglobin, 85%; red blood corpuscles, 5,200,000.

Stomach contents.—Free HCl entirely absent; total acidity, 14; erythrodextrin reaction absent; starch granules well digested; curdling principle very slow; digested white of egg in eighty minutes.

This patient was placed upon a milk diet. About every tenth day, hot water was substituted for the milk for twelve hours, and then the milk was resumed. Faradic electricity, massage, salt rubs, and hot fomentations to the abdomen, were prescribed. Tincture of nux vomica, in ten-minim doses, was given three times a day. At the end of four weeks, a meal of solid food, consisting of roast beef, or mutton, green vegetables, cereals, and zwiebach, was given at mid-day, daily. At the end of seven weeks, solid food was given at all of the meals, and between meals the patient drank daily about nine glasses of water.

The patient was last seen four months after beginning treatment. The stomach was then normal in size; the patient weighed 157 pounds, and felt well, not having any distress after meals.

I have found that dilated stomach in men is more amenable to treatment than in women. This fact has been noted so often that I have relied upon it when making a prognosis.

TALKS TO GENERAL PRACTITIONERS.

FUNCTIONAL DISTURBANCES OF THE OCULAR MUSCLES.

BY WAITER L. PYLE, M.D.,

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PART I.—General Remarks.

WHEN the visual axes of the two eyes meet exactly at the point of observation, the ocular muscles are said to be balanced. This muscular balance is maintained by the perfect anatomic conformation of the muscles and equally distributed innervation to them. Any disturbance of these factors upsets the muscular equilibrium. If the insertion or structure of a muscle is faulty, or if the innervation is anomalous, muscular imbalance is produced. This, however, does not imply that binocular fixation becomes impossible. On the contrary, the visual axes may be rightly directed by increased innervation, and single vision is maintained in ordinary work. In true squint or permanent deviation, this is not possible, and diplopia (double-vision) is only avoided by the use of correcting prisms or by forcing one eye from participation in the visual act. In other words, in true strabismus, perfect binocular vision is impossible without optical assistance, while in ordinary muscular imbalance, or heterophoria, binocular vision is maintained by increased innervation. In the first, the anomaly is in some part organic; in the last, exclusively functional.

The importance of the study of the functional anomalies of the ocular muscles is manifest when we realize that the extra expenditure of nervous energy in maintaining perfect binocular vision causes asthenopic and reflex symptoms quite as annoying as those due to errors of refraction.

The cause of heterophoria is almost always a refractive error. For many years it was supposed by some authorities that the defect was anatomic, that the muscles concerned were too short, too long, or anomalously inserted or attached, and that the remedy was surgical intervention by means of tenotomy and advancement. In fact, minutely-graduated tenotomies were seriously practiced, and all sorts of wonderful results were reported from a series of almost infinitesimal tendon-cuts. Many of the results were imaginative or the temporary sequence of the mental impression of operation. It is likely that in a great part they were due to the associate treatment, such as the careful correction of refraction. It is a safe axiom to follow that in persons in whom heterophoria will produce distressing symptoms, uncorrected ametropia will cause the same ills in an aggravated form. Tenotomy and advancement have never given satisfactory results without the correction of refractive errors.

The involuntary or automatic movements of the eyes, such as the rotations in reading, are intimately associated with the act of accommodation.

For instance, when a book or paper is brought close to the eye, we know that there is an innervation to the ciliary muscle, forcing it into action, thus changing the focus of the crystalline lens, so that it will receive rays of light from the near object and place them exactly upon the macula of the retina. At the same time, the two eyes must converge in order that their visual axes meet exactly at the near object; otherwise, there would result confusion of images or diplopia. In the same way the eyes must be rotated in or out, up or down, with a definite exactness, according as the object is held to the right, left, above or below the vertical and horizontal visual planes, otherwise the visual axes would not meet exactly at the point of observation. Whether congenital, or by long habit—the development of automatism—these movements of the eyeball are intimately associated, likely controlled by one centre, or contiguous centres, as far as participation in near work is concerned, and there is a constant relation maintained between the acts of accommodation and ocular movement. This is particularly so with convergence, and long ago the theory of squint by excessive stimulation of the adduction (convergence), associated with excessive accommodation in hyperopic eyes, was propounded, and has never been successfully controverted. The same is true of esophoria. In the same way we may explain exophoria as the result of weakened adduction by prolonged and excessive stimulation. Again, in uncorrected myopic eyes, the eye-ball is long and requires more force to rotate it, and the myope works at a very close near-point, and so puts extra strain on the powers of convergence. In addition to the foregoing, many other reasons have been advanced for the participation of ametropia in the causation of functional anomalies of the ocular muscles. No matter which explanation seems the more rational, this fact is always before us—attention to the ametropia speedily relieves the muscle defect. It is careful refraction, and not ridiculously refined surgery, that cures this class of cases. Tenotomy enthusiasts have gone so far as to advocate, before rational societies, the isolated study and surgery of individual muscles which never have isolated action. It is not the study of the external rectus, the superior oblique, the internal rectus, or the inferior oblique, that helps us in diagnosis and treatment, but it is careful observance of the powers of adduction, abduction, sursumduction and general rotation that proves of value. No careful observer nowadays believes that convergence or adduction is performed by the internal recti alone, or abduction alone by the external recti. They know that several muscles participate in these movements, and that they are controlled by a common centre of innervation for the specific rotation in question. Therefore, the important points in the study of the ocular muscle are the measurements of adduction, abduction, sursumduction, and horizontal and vertical deviations. The proposed study of oblique muscles is useless and thoroughly unreliable. We will next proceed to the methods of making the tests for determining the various muscular defects.

(To be continued.)

TREATMENT OF GONORRHEA IN THE MALE.

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Pittsburg, etc., etc.

"THERE is no royal road to geometry"; neither is there a royal road to the cure of gonorrhea, as those who have extensive experience with the disease will testify. That the vast majority of cases of gonorrhea are recovered from within six or eight weeks is true, but it is also true that a certain proportion is very rebellious to treatment. Some of these latter recover after prolonged treatment, whilst a few appear to be incurable. I believe that most urethrae that have once undergone a marked attack of the disease suffer some permanent impairment, evidenced by hyperesthesia, a urethritis of simple character from trivial causes, prostatic neurasthenia, to say nothing of the more gross lesions, such as stricture, etc.; therefore, an early cure is a very important matter, as it prevents the many sequelae which may follow.

With regard to treatment, I recognize three types, or classes, of the disease, viz.: 1. A virgin gonorrhea, in which the inflammation is of a severe character. 2. A virgin gonorrhea, in which the inflammation is of a moderate or mild character; and 3, a multigonorrhea, for in this last class the inflammation, as a rule, is subacute or moderate. Classes 2 and 3 may be treated along the same lines, unless there are special pathologic lesions left from the previous attacks in class 3.

In the first class, irrigations or injections are impracticable. The urethra is so swollen that the urine is voided in a small stream and with a great deal of pain. It is still more painful to attempt to inject a solution of any kind into such an urethra, for, in the first place, it will not enter, and, in the next place, the attempt is a source of irritation. In this class catharsis is indicated, together with full doses of sodium bicarbonate (or any of the alkalies) with hot water, persistently applied, locally. Quietude, with proper hygiene, general and sexual, is also important. To keep the bowels open, a dram of sulphate of magnesia may be given morning and evening. With the evening dose, thirty grains, or more, of bromid of potassium may be combined. This will tend to keep down erections, which are accompanied with chordee, and at the same time aid in securing rest. After the acute symptoms subside, the same line of treatment may be followed as in classes 2 and 3, which I now outline.

Irrigation by the Janet method, is, without doubt, a great aid in the treatment of gonorrhea. It is carried out thus: Fill a fountain syringe, placed six to eight feet high, with the solution hereafter described. The end of the rubber tube is fitted with a glass nozzle. The nozzle fits in the

meatus, and the irrigation is accomplished without passing any instrument into the urethra. It is not a specific or "sure cure," as some would have us believe, but it is a good method of cleansing the urethra with copious quantities of antiseptic fluids. It is less painful than attempting to accomplish the same results with a catheter or retrojection tube passed to the bulbous portion of the urethra. After the first irrigation, when the patient may be somewhat nervous, the method is painless, agreeable and satisfactory. The best general solution to use is that of permanganate of potassium of the strength of 1--4,000 to 1--3,000. I do not vary the strength of the solution much, for if it is too strong, some smarting will be produced, and it cannot be used in sufficient strength to act as a germicide. Strong solutions are less efficient than those that produce no pain. Having used other solutions, as bichlorid of mercury, formaldehyd, etc., and having found them less efficient than the permanganate, I now use the latter almost exclusively.

To make the irrigation method successful, it must be given morning and evening for six days, then once a day until the case is cured. If at the end of two weeks it is found that no better results are being obtained than by methods that take up less of the physician's time, it is then better to resort to some of the other methods.

If the patient cannot receive office treatment daily, the Janet method cannot be utilized, except as auxiliary treatment, and it becomes necessary to resort to the injection method. The medicines used for this purpose are numerous. Personally, I prefer the following injection, viz.:

R̄ Zinci sulphocarb.,	gr. xv.
Acidi boric,	gr. xxx.
Aq. destillat.,	℥vi.

Sig.—To be used as an injection every 2 or 3 hours, after urination.

To prescribe an injection to be used three times a day is temporizing and inefficient. The patient should also be instructed to use the injection at least twice during sleeping hours. By this method the pus, with the gonococci, is washed away, and nature is given a better chance in the conflict. If the patient is not making satisfactory progress, the physician himself may occasionally give an injection of nitrate of silver, grain $\frac{1}{4}$ to the ounce. In addition to the local treatment, salol with oil of sandal-wood, or copaiba, may be given three times a day.

When the deep urethra is involved, if we are using the irrigation method, the solution should be carried, after first cleansing the anterior urethra, through the urethra into the bladder; the patient is then permitted to void it. This process is repeated two or three times during each seance, as the bladder will not bear a large amount of the solution at each attempt. When the irrigation method is not practicable, instillations may be substituted, nitrate of silver grain 1 or more to the ounce being used, but not oftener than every three or four days. Salol and the alkalies are here quite beneficial.

Hot water, injected into the rectum, may also be useful. If, at the end of six or eight weeks, there remains some discharge, the passage of a *fairly* full-sized sound may be practiced. If, after the passage of the sound, the case improves, the treatment may be repeated every fourth day, but, if not, it must be discontinued immediately.

HOW TO GIVE MEDICINE TO YOUNG CHILDREN.

BY JOHN MADISON TAYLOR, A.B., M.D.,

Professor of Diseases of Children, Philadelphia Polyclinic, etc.

I THINK you will agree with me when I claim that to select wisely the drugs most suitable to relieve the maladies of infants and young children is a more important matter by far than for older folk. To adjust dosage to the delicately varying infantile scale of age and capacity for resistance is, perhaps, the largest accomplishment of the therapist; and to learn how to render the various offensive substances of the pharmacopeia acceptable to the young subject is worthy the study of a lifetime. In this last an intelligent pharmacist can be of great assistance, and that physician who has had the opportunity of spending some months in the actual work of drug dispensing is always miles ahead of him who has not. In the first place, it is well to bear in mind that few drugs are needed, or, indeed, tolerated, by infants; thoughtful hygienic regulations usually sufficing. For older children, it is admissible to use a larger variety, always holding before the consciousness the fact that one is dealing with a tender and ill-balanced organism whose cells are in a condition of budding growth and rapid proliferation. On the other hand, it is needful to realize the urgent truth of Jacobi's constant insistence that by means of well-directed medication it is possible alone oftentimes to save a wavering life or avert serious catastrophe. The therapeutic nihilist is not only a very bigoted, but an ignorant, person, and one on whose consciousness indisputable facts make small impression.

When the circulation or respiration is failing by the overwhelming toxemias of acute diseases, and equally so in the slower processes, as the vital resistances fade away, it is obvious, to a man of experience, that powerful medication is required, and that, too, most promptly and repeatedly until the desired effect is secured. Here the hypodermic needle finds its rare place in pediatrics. Again we may turn, for the salutary humbling of our minds, to the spectacle of excellent recoveries pointed out with pride by those who use mysterious potentialities buried in sugar of milk, and still further to wise old women with their "simples," effectively fortified as they are by many points of solicitous and rational hygiene too often overlooked by both educated physician and trained nurse.

Our privilege and duty as skilled physicians it is to hold the balance of power, and by means of a depth and breadth of knowledge, fortified by accurate judgment, to bridge over the lapses which inevitably come in the work of well-intentioned and oftentimes intelligent ignorance. In my opinion, our chiefest shortcoming nowadays is in the line of practical therapeutic knowledge. So brilliant are the results to be obtained, and the fame to be gained, by investigations in the laboratory, and so general are the sneers at empiricism, that there is small inducement for the younger student to spend his valuable time in acquiring a familiarity with the actual workings of those tools with which his future practical results are to be gained. Hence he trusts to his inchoate knowledge of "physiologic action" and fleshes his maiden blade deeply and readily upon his early-acquired and confiding clientele, the largest part of which is liable to be young children.

My experience at the Polyclinic, in teaching graduates of some years' standing, leads me to urge upon medical men the habitual use of the simplest agents, and many excellent remedies much out of fashion, and to warn against the use of the endlessly-vaunted new articles foisted upon a purchasing public by the accomplished manufacturer. Moreover, I often learn from these students valuable therapeutic points, self-acquired by dint of much labor, and I urge the importance of placing on record the data so gained.

No man is fit to be entrusted with the lives of sick children who has not given thoughtful attention to clinical work in this particular line. It is doubtful if his own private practice can suffice for this, though, of course, it is conceivable. It is imperative to acquire ripe judgment, to watch the actual results of certain lines of medication, and this can only be well done in hospital wards and out-patient services. The first thing to be learned is dosage, and here I find the graduate student particularly lacking; next comes the difference in susceptibility to drugs seen in children, as contrasted with adults.

The one vital point to be ever sedulously borne in mind is that during the developmental epochs of childhood, the cellular activities are most unstable, and hence the organic processes are easily disturbed. Not only are they most susceptible to toxic influences developed from within, but equally to those from without, of which the commonest are the drugs we use with a view of relieving these states. Hence it is plain that not only must great caution be exercised in applying our remedies, but an adequate knowledge of physiology should be at the bottom of our reasoning, supplemented by a wise empiricism which can only be acquired by experience of a watchful, reflective kind. Therefore, it is obvious that the custom of many of our confreres of collecting special prescriptions for use in practice is apt to be misleading, the better way always being, when in doubt as to our therapeutic resources in a given case, to drink anew at the fountain-head of some standard book on the action of remedies. The practical procedure which I

would recommend in a case of gravity is to observe the patient as often as may be, to watch the pulse, respiration, heart sounds and secretions, and also to demand of the nurse such reports as she can offer on temperature, appearance, restfulness, food, etc., and then change drugs in the exact light of organic variations.

And here a word may be said, in passing, in commendation of the plan now in much favor, of the practitioner having on hand certain drugs which can be left in solution with the nurse, to be used for only so long as there is indication for their use, or to supplement those ordered from the shop. Better results can be had by thus instantly meeting the changes on the circulation, respiration, digestion, etc., by the supply and withdrawal of these than the slower plan of sending for a prescription which may be delayed in the coming, and with pardonable economy, may be carefully used up. I constantly teach to my classes that the most needful equipment of the physician in prescribing for children is a pen and paper, to enable him, at the time, to write out detailed instructions to serve until his coming again; especially the exact hours for the administration of all remedies and foods, likewise the precise amounts of everything, including also baths, sleep and exercise. It is important to specify the temperature of baths, certainly when these are applied for the modification of temperature or other special therapeutic effect. It is impossible to assume that any mother is either a born, or a trained, nurse, and the most willing one is frequently never able to attain high accomplishments in this direction. Some, however, can be taught, and become fair nurses, if your instructions are sufficiently minute and clear; and, above all, legibly recorded, so that precise directions may be followed, as well as a conception of the spirit of their duties be acquired. The efficacy of system is here as forcefully displayed as in the commercial world, where it is almost the chief condition of success. Again, bear in mind that children differ from adults in their susceptibility to certain drugs; to some they succumb alarmingly, to others they seem most tolerant; all of which facts should be studied in the books, but a cautious experience is the best teacher. As illustrating this point, opium is notably dangerous and belladonna easily borne. Drugs which are promptly eliminated need frequent repetition, such as aconite, nitro-glycerin, alcohol, the ammonia salts, etc. Those which accumulate may be given only at long intervals, once or twice in a day, though sometimes, of course, these are needed oftener; such as strychnin, digitalis, strophanthus, the iodides, arsenic, iron, etc. Another thought: children, especially very young ones, are not revolted by simple bitters, their taste being not of keen differentiation. Women detest bitters, hence, if the mother should taste the medicine, she is apt to cry out in disgust and unintentionally set the mind of the patient against the remedy. Nor do children enjoy drugs made heavy and cloying with syrups. It is better to fix the dose as small as possible, and give a drink of pure water afterward. In the department of pharmacology, it is imperative to be most

exacting, and a physician will do well to learn by experience the capacity of certain druggists to fulfil his directions to a nicety, and oftentimes he can learn from this colleague much of importance for himself. Put the druggist upon his honor to give best service, and then let him have both credit and profit. For instance, in the administration of oils, a properly-made fresh emulsion is the best method of offering them; and, unless it be well made, it is an object of offense. In giving an oil in any form, direct the patient to swallow a mouthful of water first.

It is an extremely important subject to study the capabilities of hypodermatic medication; although the possibilities in this direction are not large in children, yet there is much to be learned in the near future in this direction. Organic extracts, various forms of serum, both simple and specialized, is a constantly widening field; not only so, but the subcutaneous administration of saline solutions is coming into much wider and more promising usefulness. A convenient and acceptable form for giving many tinctures, as well as salts, active principles and alkaloids, is in powders of sugar of milk. Many children can be taught to swallow small pills, especially the flattened discs, chocolate coated.

THE TREATMENT OF ACUTE GASTRITIS.

BY BOARDMAN REED, M.D.,
Philadelphia, Pa.

It seemed at first thought scarcely necessary to devote a talk to this subject. The diagnosis of acute gastritis is made almost daily, especially in the summer, by every busy practitioner, and, as to treatment, little or no medication is usually required. If patients would only stop eating, and drink nothing but spoonful sips of plain water, the disease would nearly always cure itself in a few days. But I have received a number of requests to discuss the subject, and perhaps there is room for a lesson, particularly on what not to do in simple acute gastritis.

Three harmful things are often done: 1. The patients themselves usually insist upon drinking large draughts of water which has been rendered irritating to the inflamed mucous membrane by the addition of ice or lemon juice, or some other sharp acid.

2. The friends are apt to insist upon the patient's taking food in spite of his positive repugnance to it, and notwithstanding the fact that it is rarely ever retained.

3. The attending physician, if taught as many of us were, that the chief remedy for vomiting is bismuth, too often stuffs frequent full doses of that or some other equally useless and disturbing drug into the protesting stomach.

Before deciding upon the treatment, you will, of course, be sure of the diagnosis. If without fever your patient suffers from severe and persistent

vomiting, not as a result of some poison from without, and the ejecta are first sour-smelling masses of undigested food, later mucus and bile, while there are present also nausea, thirst and a marked sense of discomfort or even acute pain in the gastric region, along with epigastric tenderness, headache, anorexia and great prostration, you will nearly always be dealing with simple acute gastritis, due most frequently to overloading the stomach with food, some or all of which was in a very fermentable, if not already fermenting, condition when ingested. Practitioners at the seashore, where it is the fashion to eat oysters all summer, often see very violent and distressing attacks which have resulted from eating the always highly-putrescible bivalves when these were not quite as fresh as they should have been. And, alas, it happens only too often to every physician in general practice to contend with acute catarrh of the whole gastro-intestinal tract in infants because the milk in their artificial food was already souring when given to them.

Acute gastritis may occasionally be simulated by vomiting of nervous origin, and cases of the latter may even be associated with paroxysms of severe gastric pain — gastralgia. An interesting case of this kind was recently seen by me in Atlantic City in consultation with Dr. Philip Marvel. The diagnosis between these two conditions turns mainly on the presence or absence of tenderness on deep palpation. With acute gastritis there is always more or less marked tenderness on deep pressure or kneading over the stomach. Then, in the neurotic cases the vomiting is more apt to be intermittent, as well as less responsive to simple treatment. It is noteworthy, however, that in most of these so-called nervous affections of the stomach, a thorough examination reveals some pathologic condition in either the stomach or intestines — chronic catarrh somewhere in the alimentary tract, displacement or dilatation of the stomach, or, very frequently, a movable kidney. Occasionally the cause is a latent gastric ulcer or undemonstrable carcinoma.

Acute febrile catarrhs of the stomach are rarely seen in adults, though common enough in young children, and then probably usually involve also the duodenum at least, if not the whole small intestine. These cannot always be distinguished from beginning meningitis, typhoid fever, malaria or other fevers at first, though by a careful process of exclusion the diagnosis can usually be made within a short time.

The chief indications to be met by treatment are (1) rest of the inflamed organ and (2) elimination, that is, removal of any remaining particles of fermenting or putrefying food, as well as of the previously-formed toxins.

As digestion has been completely arrested, you will, of course, withhold all food for twelve to twenty-four hours at least, or even till the acute stage is over, especially in adults; and as you are dealing with a highly-inflamed membrane, you will avoid making matters worse by administering any remedies that, by reason of their taste, smell, or other mechanical properties,

could either further irritate that membrane or excite reflexly the vomiting-center. And unless the pain is so violent as to make the duty of instantly relieving it outweigh all other considerations, you will not lock in the toxic products by giving opiates.

Besides observing the foregoing cautions as to what not to do or permit to be done, you may usually shorten somewhat the period of cure and often at the same time lessen the discomfort of the patient, by a few simple remedial measures. Considerable alleviation often results from a wet pack or compress applied directly over the stomach, the moisture to be well confined by an oiled silk or some other impervious cover, and the whole held firmly against the body by a flannel binder. This is usually applied cold, but when there is a violent, colicky pain, it is better to have it as hot as possible, and even to increase its counter-irritant properties by sprinkling turpentine on it.

For the purpose of more thoroughly emptying the stomach than nature can accomplish unaided, emetics have been suggested, but are decidedly contraindicated, and the tube which has been recommended by some authorities, is better avoided in these acute cases, except as a last resort, though often indispensable in chronic gastric catarrh. The best method is to have the patient drink very freely of warm or tepid water — not less than a pint at a time—which, being promptly vomited, will usually empty thoroughly every corner or pocket of the stomach. Let this be done several times, at intervals of ten or fifteen minutes, after which marked relief of all symptoms nearly always follows. Having thus thoroughly evacuated and cleansed the stomach, you should limit fluids by the mouth to not more than half-ounce drinks (or, in babies, at first teaspoonful doses) of plain, moderately-cooled water — not ice-cold, as a rule. Sometimes, however, *in these small quantities*, even iced water agrees well. Small pieces of ice, swallowed at intervals, suit better than water, and in severe adynamic cases they can often be administered with advantage in teaspoonful or tablespoonful doses of a dry champagne at half-hour intervals.

When medicines are necessary, the most useful one at this stage I have always found to be calomel in doses of $\frac{1}{6}$ grain for adults or $\frac{1}{12}$ grain for infants, *taken dry on the tongue, without more than one grain of sugar of milk as a diluent, and without any fluid to wash it down.* Repeat the dose in bad cases every half-hour till it produces copious yellow stools. When administered strictly as above directed, it is almost never vomited, and the effect is nearly always most happy.

Another remedy of approved value is arsenite of copper, but it must be given in very minute doses in order not to disagree. You may dissolve one of the $\frac{1}{200}$ -grain tablets in five or six teaspoonfuls of water, and, when the symptoms are very obstinate, administer a teaspoonful every half-hour, in alternation with the calomel powders.

Both the calomel and cuprum arsenite are equally helpful when the gastritis is complicated by diarrhea, with thin, watery or offensive stools.

In that case the calomel will need to be stopped as soon as the change in the character of the stools shows its action.

When violent pain persists after the stomach has been completely emptied, it means, usually, that a portion of the fermenting gastric contents has passed into the intestines and affected that region. The action of the calomel may, in such cases, have to be supplemented by copious enemata, to which sulphate of magnesia, or even castor oil and turpentine, may be added, if necessary. These enemata are also desirable in the cases marked by obstinate constipation which the calomel alone does not speedily overcome.

When the acute stage is over, bismuth often proves the best remedy for the subacute catarrhal condition which tends to linger and become chronic in some cases. It needs to be borne in mind that an often unrecognized chronic gastritis is one of the most frequent predisposing causes of acute attacks. After evacuating the bowels thoroughly, it may be necessary to resort to rectal alimentation in stubborn cases, especially when the patients are weak. Feeding by the mouth should be gradually and cautiously resumed. Among the first things to agree will probably be clam broth, peptonized milk, whey or fresh milk prepared with Eskay's Food. This last is a very valuable addition to our stock of suitable preparations in cases of debilitated or irritable stomachs, whether in adults or children. Bovinine is another suitable food.

In toxic gastritis there is an even greater necessity for emptying the stomach immediately and thoroughly, and you should not hesitate to wash it out with the help of the tube, when it is possible to introduce it. The next step must be to administer the appropriate antidotes, both chemical and physiologic, and after that to treat the corroded membranes locally by mixtures of bismuth and lime water or other emollient and healing remedies.

In alcoholic gastritis, which may be considered a sub-variety of the toxic form, the treatment may be much the same as in simple gastritis, except that considerable stimulation and an earlier resumption of feeding will be necessary. Beef extracts, raw eggs and other strongly-concentrated nutriments will be in order, though the milk preparations advised for the ordinary cases will also be appropriate. Bismuth and lime water often prove curative in this form after the extreme irritability of the first stage has been measurably abated. Drop doses of Fowler's solution have been lauded in this affection, but the minute doses of cuprum arsenite already mentioned have helped more in my hands. These are cases in which the sufferers, on account of the unquenchable thirst, are most inclined to go on drinking large amounts of iced water or other drinks, in spite of the fact that they are immediately vomited. I have often seen a slop jar filled with gallons of fluid which has, within a few hours, been poured down by such a patient, only to return instantly, with the result of increasing the irritability. In addition to carefully-regulated doses of stimulants, general nerve sedatives are usually indispensable in such an aggravated condition.

SPECIAL TRANSLATIONS.

THE TREATMENT OF STRICTURE OF THE ESOPHAGUS.¹

BY E. LAMBOTTE.

Translated especially for the INTERNATIONAL MAGAZINE from *La Presse Médicale Belge*.

THERE are few situations as lamentable as that of those unfortunate people afflicted with stricture of the esophagus. Inanition quickly overtakes them, and it is in a state of extreme physical weakness that they see death stare them in the face. Doctors have always been devising some means for their relief. Therapeutics, too, contains many remedies; their number at once testifies to their inefficiency and to a solicitude which is an honor to the profession.

It would certainly take too much time to review them all, and such is not my intention, but having had occasion to apply a great number of the proposed means, particularly the more recent ones, it seems to me it would be of interest here to note some of the observations I have made.

The nature of the lesion governs the therapeutics in stricture of the esophagus. The first question should be, Is it cancerous, or not? If it is not, if we have to do with a cicatricial or syphilitic stricture, in a word, benign, it is permissible and rational to employ a treatment that is curative, even if it is long and tedious. In such a case, the benefits to be derived are worth great sacrifices, as, if the obstacle is once overcome, the patient may live an indefinite length of time.

On the contrary, if the lesion is cancerous, the patient is condemned to certain death; life may be, at most, prolonged for a year or a year and a half; this is too short a time for the employment of a lengthy treatment. What we want is immediate intervention, that will, in a few days, place the patient in a condition to take nourishment and continue his daily life. It is to these cases particularly that I propose to allude.

There are three important methods of treatment in cancerous stricture of the esophagus:

1. Dilating by bougies.
2. Intubation of the esophagus.
3. Gastrostomy.

1. Catheterizing in these cases is only valuable as a means of diagnosis, as the dilatation obtained is only temporary and can only give important results when repeated very frequently. This treatment becomes a veritable torture, which it is cruel to impose on the patient. It is, besides, not without danger, and, doubtless, we all remember the unlooked-for accident that befell one of our most eminent practitioners a few years ago. The doctor, though of wide experience, saw the instrument penetrate one of the larger arteries of the mediastinum, already, perhaps, ulcerated by the neoplasm,

¹ A communication made to Medico-Chirurgical Society of Brabant.

with an immediate frightful hemorrhage. Those who know the difficulty of passing even a small sound will not be astonished at such an accident. In fact, it is often necessary to use force, while, on the other hand, the friability of certain cancers is such that they are easily penetrated by the instrument employed with even the slightest possible force. To decrease as much as possible this danger, I have modified the classic instrument of Trousseau. The olive-shaped head is grooved by a blunt screw thread which permits it to progress by rotation instead of pressure. This instrument finds its way, in a sense, into what remains of the lumen of the esophagus in the center of the cancerous ring. Having passed the stricture, the instrument is withdrawn without rotation, and a few fragments of the neoplasm come with it. The passage is thus open for a few days, and it becomes easy to proceed with intubation, which we will describe presently.

This is all that can be expected from catheterism, which, we repeat, is an excellent means of diagnosis and a detestable method of treatment, since the open passage closes afresh in two or three days and prevents deglutition.

2. Intubation of the esophagus has the advantage of rendering the acquired dilatation permanent and of placing the patient immediately in an almost normal condition. Numerous instruments have been described that are very complicated in practice. They appear to us to be useless. We turn to a simple Fancher tube, the size of our spiral olive. We choose the large or upper extremity with the enlarged funnel-shaped end found on those that are in the market. We cut away all that is superfluous; the funnel end should always be preserved. Below there remains a section of the tube proper about 7 to 8 cm. in length. Grasping the larger portion in a forceps employed for removing foreign bodies, it is carried as far as possible, immediately after the withdrawal of the olive bougie. The first swallows bring the funnel-shaped end in contact with the surface of the stricture, which it cannot pass. The tube is tolerated perfectly, even when the strictures are high up. It goes without saying that the patient can from henceforth take only liquid nutriment. But the result is surprising; as a rule, the patient is enabled to resume his occupation at once. The moral comfort is very great, and the only thing to be said against this method is the inconvenience of vomiting it up, sometimes. However, this is exceptional. I have seen this only twice in six months, in the case of a patient who had carried the tube for nearly a year. It was not repeated after I had furnished him with a larger tube. This mode of intubation is better than that which consists in placing a thin rubber tube in the esophagus (about 3 mm.), which enters through the nostril and passes through the pharynx and esophagus into the stomach, and by which, three or four times a day, liquid aliments are injected into the stomach without withdrawing the tube. In this case the patient is an invalid. He has no longer the satisfaction of tasting and swallowing his food normally, advantages which he retains in the preceding method. Moreover, he is tormented by the constant presence of the tube in his nostril and pharynx, and is less able to bear these sensations than those of a concealed tube.

Compared with gastrostomy, intubation has this advantage, that it does

not require chloroformization or the opening of the abdomen, and, consequently, the convalescence and confinement in bed which they entail. To my mind, it is the operation of choice in the majority of cases, and I have recourse to it willingly in cases where gastrostomy would otherwise be indicated. Where gastrostomy is indicated, I proceed as follows: The epigastrium having been laid open by a median vertical incision, I seize the stomach and make a vertical opening, 5 cm. long; through this I pass my finger to the cardiac orifice. The esophageal sound having been introduced by the mouth, I attempt, by a double maneuver, facilitated by the sense of touch, to pass the obstruction. If I succeed, which is nearly always the case, I immediately perform intubation as I have described it, but with the following modifications: The intubation canula is fixed by a thread to the upper extremity of my bougie, which is perforated for this purpose, as it lies in position. In drawing the bougie through the gastrostomy wound, I draw the canula down until it becomes tightly fixed in its place. The bougie serves, after a fashion, as a needle. I then cut away in the stomach any excess of the canula. I affix to it a piece of rubber tube, shaped like a cross, which makes expulsion from this time impossible. The two tubes are fastened together by a few silver wire stitches. The tube is easily tolerated and resists strongly. It resists in its inferior portion, where it is exposed to the action of the gastric juices. I can affirm, from an autopsy, that three months had passed and hardly a trace of alteration was present.

I have also had silver tubes constructed for the same purpose, but they seemed to me inferior, and are only needed in cases where life may be exceptionally prolonged. The larger extremity consists of a funnel, flattened from before, backward, to conform to the shape of the esophagus; to this is attached an American tube (a tube formed of a metal spiral, of which the turns touch, and thus render it flexible). When the tube is in place, I do as in the previous case. I cut off in the gastric cavity the excess of the tube and affix to it a transverse piece by means of a screw to prevent its expulsion during vomiting. This done, one is certain that the intubation canula is kept firmly in place, and that the cardia is not compressed by the cross piece. The gastric wound is then sutured by the ordinary method and the abdominal wound closed.

I would call especial attention to the great utility of the bimanual catheterism, which I have just described. I find it also applicable in cicatricial strictures. I consider it the preferable means in this condition in all cases where dilating catheterism is impossible. One cannot believe, without having experienced it, the security and the power that it gives. If the stricture is cicatricial, it is needless to say intubation is not required. It is better worth while to try to obtain a large dilatation, and then maintain it by repeating the dilatation, which can afterward be made with great ease. In one case of this kind, where I had succeeded in breaking through the obstacle several times with the large olive-shaped bulb of Trousseau's bougie, I congratulated myself on having had the foresight, before closing the abdomen, to fix the stomach to the abdominal wall, thus preparing for a gastrostomy that only needed a simple cut with a tenotome to be complete. Three or four weeks afterward, symptoms of obstruction appeared, throwing

the patient into such a weak condition that an ordinary gastrostomy would have been dangerous. A small incision permitted me to nourish the patient and to assure his recovery. The intubation of the esophagus in cancerous strictures has given me such satisfactory results, that I have in two cases applied this method to stricture of the pylorus. I shall return to this question, which is worthy of particular attention. It is sufficient to say it seems to me it might be often substituted for gastro-enterostomy. Indeed, under certain circumstances, it has this advantage over that operation, that it is simple and gives greater security.

3. There are cases in which intubation is contraindicated (cicatricial and insurmountable cancerous strictures), here the only resource remaining is gastrostomy of the patient as to escape death by inanition. Numerous methods have been published that are intended to diminish the inconveniences resulting from operation. What we must certainly not lose sight of is the necessity of making a very small opening and at a point as far removed from the dependent portions as possible, to prevent its spontaneous dilatation. I will not describe any of the classical operations, but confine myself to my own method, which has given for some time past such satisfactory results that I do not deem it necessary to seek a better method. I operate as follows:

The abdomen having been opened, I draw the stomach forward and insert four sutures of silk in the anterior wall, as near the cardia and lesser curvature of the stomach as possible. These sutures mark out a quadrangular area 15 mm. square, formed by the stitches, of which the ends remain free. Having raised the liver, I assure myself that none of the intestines are interposed between the abdominal wall and the stomach; a Revendin needle is then passed through the abdominal parietes at a distance from the original wound; the ends of the stitches placed in the stomach are drawn out by it. They are then fastened, and thus serve to fix the viscus and promote adhesions. I then open the stomach by a vertical incision opposite the parietal wound in the abdomen. Through this incision two fingers are passed into the stomach, which serve to guide a trocar, 3 mm. in diameter, which is held in the other hand and forced through the abdominal wall and the wall of the stomach at the same time in the area marked by the sutures. A very fine rubber tube is introduced through the canula and the canula withdrawn. The patient is then to be fed through this tube. The tube will later work loose in the fistula. There will then remain a narrow fistula, the obliqueness of which assures perfect drainage. The gastric and abdominal incisions are then closed.

This method removes the artificial mouth from the larger abdominal wound, which is in excellent aseptic condition. This is an advantage not to be despised, as the weakness of the patient sometimes renders cicatrization slow and difficult, and, in cases where inanition has gone very far, it is not rare that after eight days the wound, though aseptic, has attained only insufficient solidity and reopens as soon as the sutures are removed.

In addition, the fistula is not apt to dilate; it is made as high up as possible; it is surrounded by healthy skin; all of which are favorable circumstances, as they tend to prevent leakage and ulceration from the gastric

juices. The execution is comparably rapid, and the aseptic conditions, which are assured, give exceptional guarantees of benign healing.

However briefly we treat the question of strictures of the esophagus, we cannot leave it without speaking of two therapeutic methods, the judicious application of which may procure the most brilliant success. They are nearly always employed to put the patient in good operative condition. I refer to nutritive enemata and injections of artificial serum. The nutritive enema that I have employed is composed of bouillon with sugar and peptone added. The bouillon furnishes the mineral elements of which the utility has been amply demonstrated; sugar, the best respiratory food, may be absorbed in sufficient quantities by way of the rectum; lastly, the peptone completes this alimentation so that it complies with nearly all the physiological requirements. It is the evident physiological considerations that have led me to the use of this formula. But it must not be forgotten that, to obtain the best results, such quantities must be used as are demanded by the age and weight of the patient. I generally prescribe injections of 125 gms., containing two or three tablespoonfuls of dry peptone, and six or eight lumps of sugar, repeated every hour, as regularly as possible. It is difficult to have more than ten absorbed each day. The patient is thus sufficiently nourished, but suffers from thirst; indeed, it is thirst which is most urgent, and it demands the first relief. When one needs to be assured of the urgency of intervention in the case of these patients, it is not necessary to ask them if they are hungry. Even in cases of extreme emaciation, they declare they are not hungry. The mental condition, added to the thirst, is not compatible with hunger. Thirst is present, although liquids have been swallowed some time after solid alimentation has ceased. Where it appears, the urgency is great, as the unfortunate patient soon falls into an extreme cachexia. It is especially in such cases that we ought to study the aqueous inanition to which we drew attention some years ago. In a few days the loss of water rises to several kilograms. It is thirst more than hunger that is the cause of the emaciation and adynamia. In operating, one is astonished to find a noticeable layer of fat, which contrasts with the thinness of the patient.

In one case I have been able to measure by weight the approximate importance of the deficiency of water. In three days, during which I administered nutritive injections and three liters of serum every twenty-four hours, the weight rose to 8 kilograms (20 lbs.), and showed by its vacillations that the watery deficit was nearly 8 liters ($8\frac{1}{2}$ qts.)!

It is in the muscles that the loss of water shows; the examination of the blood, on the contrary, reveals the normal density, or nearly that. It is the muscles that store it up, and this also explains the rapidity of the return to normal stoutness. In the normal state the muscular system contains half of all the organic water.

What we have just said shows that the nutritive injections sufficiently nourish the patient, but that often there is an insufficiency of water, and this is especially true during the heat of summer, or when the patient is in too warm a room. Nevertheless, they are remarkably powerful, and there is no doubt that by judicious care life may be prolonged some months.

In practice, these views are not always substantiated; sometimes the patients neglect the minutiae of the prescription and allow themselves to fall into an adynamic condition. I have seen a patient who had arrived at the most advanced stage of inanition, and who was so weak that the radial pulse was scarcely perceptible, recover her strength by these methods alone, and so completely that she left her bed and followed her occupation for three weeks. But soon an insurmountable ennui caused her to abandon her treatment, and she allowed herself to die, stubbornly refusing either operation or injections. Needless to say, she had listened to one of the good old women who will not listen to any talk of an operation.

What we have just said regarding the usual insufficiency of watery alimentation by injection justifies the subcutaneous injections of artificial serum and indicates it at the same time. It is a very forceful medication and needs to be judiciously applied. To employ it perfectly, one only needs to regulate the dose. This ought to be large and the administration fractional. One can make sure by two measures that the necessary dose is reached: by the cessation of thirst and by the weight remaining near the maximum obtainable. So long as these results are not attained, the method has not been sufficiently applied, and the results it attains cannot be hoped for.

A Barbarous Custom in Darkest Russia. In connection with a report of a case of vaginismus produced by tearing the hymen with the finger at the first copulation, Dr. Kalmikow relates, in the *Vratch*, the following custom prevalent in some parts of Russia: The proof of virginity is established by the finding of blood on the chemise of the bride after the first coitus. If she proves to be a virgin, the wedding celebration is especially joyful, and a red flag is hoisted on the house of the newly-married, a similar flag being carried in the wedding procession. But if the bride "sinned," the programme is changed, and insulting remarks are showered upon the bride and her parents. The question of virginity being the only one that determines the character and course of the celebration, the young couple are placed, immediately after the ceremony, in a room, the crowd standing at the door impatiently awaiting the result. The young husband is often instructed to tear the hymen with the finger, should he find himself unable to accomplish the act rapidly in any other way. If he fails even then, the best man comes to his rescue and performs the digital operation for him. After the act is accomplished, the "friends" make an expert survey of the blood-stain, and the result is communicated to the anxious parents. And this brutal act, the author remarks, takes place in the very midst of the clergy, teachers and other intelligent people inhabiting these districts.

Corrosive Sublimate in Stomatitis. Dr. Tenneson, as well as other noted French physicians, employs sublimate soap in the treatment of infectious glossitis and stomatitis, even when the latter is produced by calomel. The soap is best rubbed in the gums by means of a stiff tooth-brush. The only objection is the discoloration of the teeth produced.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Treatment of Appendicitis. Dieulafoy (*Gaz. des Hopitaux*, Jan. 31, 1899), discussing a paper by Chauvel on "Appendicitis in the Army," calls attention to the fact that, as is the well-known rule, the cases cited rarely show any preceding trouble with the digestive tract, no gastric or intestinal troubles. Thus these 171 cases serve to show that appendicitis is a distinct entity, and not a part, or caused by colitis or entero-colitis. Eighty-three of these cases were treated medically, 88 had surgical intervention; of the 83 medical cases, the treatment being either opium or purgation, 30% died. They died of general suppurative peritonitis, peritoneal septicemia, or a general infection. In the 88 cases treated surgically, the mortality has been 31.8%. Dieulafoy had himself seen 61 cases, assuming the responsibility for these either alone or in consultation. Not believing at all in medical treatment for appendicitis, these were all sent to the surgeon, with the result that in the first 40 cases 6 died, and, in the next 21 cases, 1 died, a total mortality of 11.1%. Even this mortality, he thinks, would have been decidedly reduced if an operation could have been done earlier. He explains the fact that his statistics were so much better than those of Chauvel by the early operation, not a moment being lost when the condition was realized. He thinks, further, that the mortality could be reduced to nil if the operation could always be performed early enough.

Hyperacid Pretubercular Serum. Gautreles (*La Presse Med. Belge*, No. 47, 1898) makes a preliminary report on this subject, his experiments not having been carried far enough to be absolutely conclusive. He starts with these assumptions: The soil plays quite as important a role in the evolution of tuberculosis as the bacillus itself. All bacterial infection has, as a consequence, an auto-infection due to an absorption of the products

of secretion of the bacilli. The secretions of the tubercle bacillus belong to two opposite groups: a toxin, hypothermic and vaso-constrictor; and leucomaines, hypothermic and vaso-dilator. The differences in the development of tuberculosis are due to the preponderance of one or the other of these secretions. Finally, animals refractory to tuberculosis have an acid soil; those who have survived tuberculosis show the same soil, and beneficial medicines are those which acidify the organism. He cultivated bacilli of human tuberculosis in an acid medium, and injected the product, after sterilization. The following conclusions are reached: On serum acidified with 4% of lactic acid, abundant cultures can be obtained. These cultures resemble those of avian tuberculosis. Contrary to the conditions obtaining in an alkaline medium, the toxins secreted are hypothermic and vaso-dilator. Animals receiving a toxic dose of this acid serum die in a tetanic state and with evidence of general congestion. Animals injected with increasing doses finally sustain a toxic dose.

Chronic Tuberculous Peritonitis Cured by the X-Rays. Ausset and Bédart (*L'Echo Med. du Nord.*, No. 46, 1898) had treated a case of unquestioned tuberculous peritonitis in a girl of nine years, by tapping, abdominal section, renewed tapping, and washing out with a creosote solution, with no good result. In fact, during this treatment her condition grew steadily worse, and the tuberculous masses in the abdomen steadily enlarged. March 7th, she was first subjected to the X-rays, the Crookes' tube being placed 20 cm. from the surface of the abdomen for 10 minutes, two days later at 13 cm. Throughout the month the treatment was continued every 2 or 3 days. During most of April the treatment was unavoidably discontinued, to be resumed toward the end. By the last of May there was absolutely no abdominal effusion. From this on she steadily improved, gaining weight and strength, until she became apparently well. The X-rays produced no dermatitis, merely a decided pigmentation of the exposed region, which could still be seen 90 days after cessation of treatment.

On Enteroptosis. Obrastzow points out the necessity of establishing a normal limit to the abdominal organs before their sinking can be definitely established. The lower boundary of the stomach lies about 2 to 4 cm. above the navel when the person is in the recumbent position. In women it is somewhat lower. This position changes under different physiologic and pathologic conditions; thus, the position of the stomach will be much lower when nutrition is impaired. Enteroptosis may also be caused by a relaxation of the abdominal muscles, due to either some pathologic changes in the muscles themselves or faulty innervation, as is the case in frequent pregnancies, obesity, neurasthenia, etc. Congenital enteroptosis is never found. On the other hand, it may develop in children suffering from inherited diseases or badly nourished. In them it usually develops about the time of puberty. As to the treatment, the author considers the diet-cure of primary importance. A well-fitting abdominal supporter is a good palliative. In the neurasthenic, the treatment should be directed to the conditions present.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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Polypoid Intratracheal Tumor Causing a Flapping Inspiratory Murmur in the Lungs. Brauer (*Deuts. Arch. für klin. Med.*, Feb. 9, 1899) reports a case showing the lesion mentioned. It occurred in a woman, aged forty-eight years, who had suffered for three years with a feeling as if something was flapping back and forth in her neck. She had a harsh, unproductive cough, restless nights, considerable dyspnea during the day and inability to work because of the difficulty in breathing that exertion produced. Examination by the laryngoscope showed a small tumor attached to the trachea wall by a pedicle which came forward against the anterior wall in inspiration, and during expiration fell back under the true vocal cords. Stridor was present only at intervals. Over the upper portion of each lung there could be heard a short, flapping murmur, that occurred soon after the commencement of inspiration; was heard loudest naturally over the larynx, and could not be detected in the lower half of the thorax. The character of the murmur and its time were, of course, explained definitely by the flapping of the tumor against the trachea wall when it was drawn down in inspiration. It was removed by operation, and was found to measure 12 mm. in diameter. The pathologic diagnosis was that of hemangiosarcoma.

The Occurrence of Crepitant Rales (Knisterrassel) in Cases of Pleural Effusion. Janowski, of Warsaw (*Zeitsch. für klin. Med.*, Bd. XXXVI., Hft. 1 and 2), describes a crepitant rale that occurs in cases of pleurisy with effusion. These are small, very soft in character, moist, very superficial, very regular in rhythm, and heard only during inspiration. J. has observed them in a number of cases during the last six years, and claims that he has never failed to find a pleural effusion by exploratory puncture in cases in which they were present. He claims that their diagnostic value lies in the fact that they occur oftenest in instances when the amount of fluid is small and the other symptoms of the condition are not well marked. They may be heard, however, when there is considerable fluid, and, on the other hand, their absence does not exclude an effusion. They are distinguished from the crepitant rale of the first stage of pneumonia by their soft, moist character; from the small rales arising in the smaller bronchi by their superficiality, regular rhythm, and the fact that they occur only during inspiration; from the *crepitatio redux* of pneumonia by their regularity and

by their uniform smallness; and from the small rales of edema by the fact that they are always small and unmixed with larger sounds. If the crepitations occur after tapping an effusion, it is an indication that there is fluid remaining. The crepitations occur in exudative pleurisy during inspiration, from the breaking apart of the walls of the air vesicles, which have adhered together during expiration. The fluid in them is not increased above the normal amount found in the alveoli and needed there to maintain the natural moisture of the part, but the pressure of the effusion presses their wall together more firmly than normally and causes them to adhere. Different factors play a part in the production of these phenomena besides those mentioned. Especially the normal elasticity of the lung tissue must be taken into account. It is likely that the quick and intense congestion of the lung, due to interference with its circulation, causes a decrease in resistance, or some infective agency may take a part in the process of producing a local weakening, and so the complete collapse of the alveoli in expiration is favored. As the power of resistance of different lungs varies, it can be readily understood why sometimes a small amount of effusion may cause the crepitations to appear, and in other cases a larger amount is required. J. explains the "soft, moist" character of the rales in which they differ from the crepitant rales of pneumonia, partly by the different character of the fluid in the alveoli, which in pneumonia is probably fibrinous; and partly by the fact that the presence of a layer of fluid between the lung and the ear changes the physical character of the sounds. J. concludes his paper by a review of the different authorities on the pleura, showing that no observations upon the true significance and causes of the crepitations have been recorded up to the time of publishing his paper.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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The Influence of Cod Liver Oil on the Secretion of Gastric Juice.

Wirshillo (*Vratch*, Jan., 1899) has made a number of experiments with a view to determine the character of the gastric juice when various quantities of cod-liver oil have been added to the food. The experiments, 15 in number, were made on children free from any gastro-intestinal disturbance. No change in the mode of life was made. Each investigation was divided into two parts. (1) A test breakfast, consisting of 200 to 400 grms. of milk, was given, and the stomach contents analyzed in $1\frac{1}{2}$ and $2\frac{1}{2}$ hours; (2)

the same test breakfast, with 8 grms. of cod-liver oil. The analysis of the stomach contents covered the following points: 1, total acidity; 2, amount of HCl (free and combined), and, 3, the digestive power. Phenolphthalein and Töpfer's method were used as indicators. The digestive power was determined by the method of Metta. As a result of these investigations, the following conclusions were reached: 1. Cod-liver oil diminishes the amount of HCl and pepsin, the latter being more affected in the beginning of digestion. 2. The disturbing effect on the gastric juice is especially marked at the beginning of digestion. 3. The secretion of the gastric glands, though weakened by the oil, lasts longer than usual. The author then concludes that, in view of these objectionable features of cod-liver oil, we should, by further experimentation, find another oil equally efficacious but not injurious to digestion.

Concerning the Influence of Sex in the Transmission of Cancer of the Stomach. Emile Lairé, of Carignan (*Gaz. des Hopitaux*, No. 4, 1899), cites some interesting statistics, which show that in France, at least, cancer of the stomach is greatly more frequent in men than in women. He quotes from a report made some years ago by Rebulet, of Normandy, describing 106 cases of cancer, and particularly cancer of the stomach, but almost exclusively in men. The population of the region was composed largely of workers in cloth, and husbandmen. They all drank liberally of strong cider, as much as 2 litres at a meal, and frequent dyspepsias and dilatations resulted. Rebulet, himself, stated that the women drank as freely as the men. Of 23 cases of cancer of the stomach studied by Rebulet, only 1 was in the person of a woman. Manichon, of d'Oulchy-le-Chateau, is cited as having observed, in 23 families, 41 cases of gastric cancer in men and 16 in women. These observations are thus summarized:

First Series.....23 cases in men; 1 in women.

Second Series.....41 cases in men; 16 in women.

In all.....64 cases in men; 17 in women.

The author infers that there must be a far greater predisposition in the male than in the female to acquire such neoplasms. He asks why this should be, considering that the two sexes live under the same conditions, eat the same food, drink the same beverages, etc. [Possibly, in the parts of France referred to, there is such an identity of living conditions affecting the sexes, but we doubt it. In most Christian countries the men of the working class, especially, consume much more alcohol and tobacco than women.—B. R.]

Some Suggestions as to Diet in Diseases of the Stomach. Bettmann (*Cincin. Lancet-Clin.*, Dec., 1898) reprimands the existing relations of most physicians to the subject of dietetics. He denies the wisdom of the traditional rule that "each man is the best judge of his own diet," or "what is one man's meat is another's poison." These maxims are applicable only in a few exceptional cases. Generally, the patient's diet should be subjected to as much scrutiny and circumspection as any other method of treat-

ment. Patients suffering from disturbances of the gastric function will not get well on internal medication unless the strictest attention is paid to their diet. Equally reprehensible is the other extreme of restricting the diet too much. Many patients treated by a rigid diet are actually suffering from slow starvation. The most striking symptoms such patients present are considerable loss of weight, dryness, a grayish-yellow, cachectic appearance of the skin, and abnormally slow pulse and respiration. They often complain of a gnawing sensation at the pit of the stomach, which is temporarily relieved by taking food, but returns an hour or so later. An exclusive milk or beef diet will eventually lead to wasting and anemia if the patient be actively engaged. In cases where an exclusive diet is necessary, it should be restricted for the shortest time possible, the patient gradually and cautiously returning to a general diet as improvement advances. While the diet-table should be arranged according to indications presented in each case, a few general principles may be laid down. As a general rule, large draughts of hot water will benefit only those who are well nourished and whose digestive system is in a state of sufficient muscular tonus, but will do harm in cases of atonic dyspepsia; the latter will do best on a dry diet, taking very little fluids, with meals. In hyperchlorhydria, sour foods and starches are distinctly harmful. Starches are also contraindicated in fermentation, but when the latter is absent, potatoes, rice, farina and wheat flour may be allowed. Coffee is harmful in most cases, especially when taken at breakfast. Fried food of any kind should be interdicted in all cases of dyspepsia. Contrary to the general belief, baked apples are more difficult to digest than raw. Peaches, especially raw, are harmful. Pears are very prone to disorder the bowels. Sweet potatoes induce intestinal flatulence. Pineapple juice is often an aid to digestion. In conclusion, the author remarks that "every physician who treats dyspepsia should study foods thoroughly, not only in the laboratory and text-books, but in the kitchen and the clinic." [There is an abundant experience which tends to disprove the correctness of the writer's dictum as to raw and baked apples.—B. R.]

NEUROLOGY.

UNDER THE CHARGE OF

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Tumor of the Hypophysis without Acromegaly. Burr and Riesman (*Jour. Nerv. and Ment. Dis.*, Jan., 1899) report such a case, and argue from it as to the etiology of acromegaly. The patient was a blind woman, with post-neuritic atrophy in both eyes, some rigidity of legs and spastic knee-jerks, ankle clonus on one side, a variable mental state, and a history of

comatose attacks. The tests of the sense of smell were not reliable. She died in coma. At the necropsy a tumor was found, involving, but not destroying, the hypophysis. The relation between disease of the hypophysis and acromegaly is probably an intimate one. In favor of such a belief, the writers find that in 58 out of 61 cases of acromegaly, the hypophysis was diseased, the lesions being various. In many cases there are symptoms of brain tumor, and in those seen sufficiently early, hemianopsia is often observed; the visual symptoms increasing with the increase of bony symptoms. Reasoning from analogy, there is no reason why hypophysial disease may not cause acromegaly. Against the hypophysial origin they find that disease of the hypophysis may exist without acromegaly. In none of the reported cases of this kind, however, is complete destruction of the gland mentioned, and a small amount of glandular tissue may do the work of the whole, or may exercise an inhibitory influence on the growth of the bony extremities. Acromegaly may exist without visual symptoms. Almost all the ductless glands have been found diseased in acromegaly, but none so frequently as the hypophysis. The hypophysis has been experimentally destroyed in dogs without the production of acromegaly, but the function of the gland in man and in the dog may not be similar. The writers believe that acromegaly is due to disease of the hypophysis, but that the lesion must affect the entire glandular structure.

The Treatment of Tetanus by the Intracerebral Injection of Antitoxin. Semple (*Brit. Med. Jour.*, Jan. 7, 1899) gives a clinical account of a case treated successfully by intracerebral injection, and expounds the theories upon which he founds his treatment, giving due credit to Roux and Borrel, as well as to Wasserman. Tetanus is due to a very strong toxin, elaborated by the tetanus bacillus at the point of inoculation. The toxin reaches the central nervous system by two paths: one, the nerves; hence the early contractions observed in some cases at the site of absorption; the other, the blood stream. When it reaches the central nervous system, it is seized upon and fixed by nerve cells just as anilin basic dyes are fixed by cell nuclei or bacteria. This fixation takes place earliest in the spinal cord. The affinity between tetanus toxin and the cells of the brain and spinal cord is very strong, hence the toxin is designated a neurotrophic poison. In a healthy animal immunized by a hypodermatic injection of antitoxin, tetanus toxin is neutralized when administered subcutaneously, and never reaches the nerve cells; but an intracerebral injection in such an animal will cause death, apparently proving that tetanus antitoxin, used hypodermatically, does not immunize the brain cells. In a case of suspected tetanus, the hypodermatic injection of antitoxin is an almost certain preventive, but if the symptoms have appeared, intracerebral administration alone conveys immunity to the nerve centres and prevents fixation of the toxin. Performed early, the operation arrests the progress of the disease, and, after a shorter or longer persistence of the symptoms, recovery is likely. The seat of operation, as done by Semple, is anterior to the motor areas of the brain. Very small openings are made in the scalp and skull. A needle with a rounded point (to avoid the production of hemorrhage) is used with a screw piston

syringe, and $2\frac{1}{2}$ c.cm. of double-strength antitoxin are injected, drop by drop. Twenty c.cm. hypodermatically, in addition, are given daily for three or four days, to neutralize the toxin as it becomes absorbed from the source of supply.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Report of a Case of Double or Fused Kidney. Broody (*Medicine*, Feb., 1899) reports a case of a male, 65 years old, suffering from melancholia and pulmonary tuberculosis. At autopsy there was found a small adrenal on the left side in its normal position, but no kidney. Where the kidney should have been there was a small round body $\frac{1}{4}$ inch in diameter, which was thought to be a diminutive, non-functional kidney. There was no blood supply to it direct from the aorta and no ureter. Microscopic section showed it to be a supernumerary spleen. It was farther removed from the spleen than such bodies usually are. The adrenal on the right side was much larger than that on the left. The right kidney was large, measuring $5\frac{1}{2}$ inches in length, 3 inches in its greater width, and $2\frac{1}{4}$ inches across its narrowest portion. Over its upper half was a depression with an average diameter of $1\frac{1}{4}$ inches, the uppermost edge of which corresponded to the internal border of the kidney. From the pelvis originated a ureter, which passed downward and outward to the right, over its anterior surface, and left it at the junction of the external with the inferior border. Thence it took a rather tortuous course across the common iliac artery at its bifurcation, entering the bladder at the usual point. On the lower portion of the inferior half of the kidney was a depression $1\frac{1}{2}$ inches in diameter, and from this pelvis originated another ureter which passed downward and outward to the left through the pelvic tissue, across the right common iliac artery at a point $1\frac{1}{2}$ inches below the bifurcation of the aorta. After reaching a point a little to the left of the border, it turned to the right and opened into the bladder at about the normal place. In 500 necropsies examined by Dr. Broody, double or fused kidney with two pelves and two ureters, as herein described, occurred once only. From the foregoing it would appear that such kidneys do not occur as commonly as supposed.

A Fallacious Test for Albumin in the Urine, with Remarks on the Best Tests. Ludlow (*Med. Rec.*, Jan. 7, 1899) demonstrated by a series of painstaking experiments the utter unreliability of the alcohol test

for albumin, as advocated by Dr. John G. Truax. He finds that it reacts with urine not containing any albumin, as shown by the control tests by heat and nitric acid, and does not react with urine highly albuminous. It also gives a reaction with concentrated urine, failing to do so when the urine is diluted. The reaction bears no relation to either serum-albumin or mucin, and while the author cannot explain the cause of the precipitate in the cases in which the reaction does occur, he is, nevertheless, certain that it is not albumin. The best test for the latter is still the old heat and nitric acid, although the author favors the nitric-magnesium test as the most delicate of all.

Some of the Clinical Aspects of Granular Kidney. West (*Lancet*, Feb. 25, 1899), in the course of his Lettsonian Lectures, stated that in the granular kidney the albumin is slight in amount and usually intermittent. The albuminuria is often the only symptom present, and it is difficult to decide the pathologic condition underlying it. He divides the various forms of albuminuria into the following five groups:

Albuminuria	{	Prerenal	{ 1. Obvious cause, <i>e.g.</i> , morbus cordis, fevers, etc.	{ Physiologic.
		Renal	{ 2. No obvious cause.	
	{	Postrenal	{ 3. No evident renal disease.	
			{ 4. Evident renal disease.	
			{ 5. From urinary passages, etc., generative organs, vagina (accidental).	

Albuminuria has followed in certain persons an excessively albuminous diet, excessive exercise, cold baths and exposure. It may also be found intermittently in certain persons under various circumstances, in subjects apparently healthy. An examination of 336 healthy persons, made by Mr. Levison, at the request of the author, revealed the presence of albumin in some form in 136, or 40.47%; serum-albumin occurring in 22.02%, and nucleo-albumin in 18.05%, the amount in all cases being extremely small. Various other observers have similarly noticed the frequent occurrence of albuminuria in apparently healthy persons. The observations of these authors differ, largely on account of the different tests used, and, therefore, the desirability of a standard test is quite apparent. In drawing conclusions from these observations, the ages of the individuals in whom albuminuria was found are to be taken into consideration. Its occurrence is less frequent up to the age of 10; exceedingly frequent between 10 and 18, the so-called albuminuria of development; quite common between 18 and 25, and comparatively infrequent between 25 and 30, forming, during the latter age-period, about 0.55%. This form of albuminuria the author calls latent albuminuria. It is never, strictly speaking, physiologic, and while in many cases it may disappear without leaving any morbid condition of the kidneys, in others renal disease ultimately develops. In general, however, its significance is less up to the age of 25 than after that period, the chances of the development of renal disease increasing with the age. This has an important bearing on life-insurance. The author accepts the rules formulated by Rabagliati: 1. Over 40 years of age, reject. 2. Under 40 years of age, load heavily; and, 3, in young adults, rate up moderately. He takes

exception, however, to the third rule, believing that many cases between 18 and 25 may be safely accepted. The existence of albuminuric retinitis and amblyopia is always a grave prognostic sign. These disturbances of vision occur usually late in the disease, and, as a rule, when patients begin to complain of some defect of vision, the disease is already far advanced.

DERMATOLOGY.

UNDER THE CHARGE OF

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The Blue Glass in Syphilography. Jullien (*Annales de Dermatol. et Syphilog.*, Jan., 1899) discusses the value of the blue glass in the recognition of syphilitic eruptions. This procedure was first suggested by André Broca, in 1893. He then claimed for it the following possibilities: (a) The discovery of an eruption before it is apparent to the naked eye; (b) the revelation of traces of former eruptions; (c) the revelation of indefinite eruptions (eruptions frustes). Before the eye is able to clearly distinguish the roseola, its elements are discoverable by the blue glass, sufficiently often to remove all doubt. Of recent years the relatively large proportion of cases of syphilis that recover spontaneously after the appearance of the chancre, only to redevelop at the end of several years in the form of late manifestations, has been insisted upon. The number of these cases will lessen if the blue glass is carefully employed in studying the surface of the body during the early periods of the disease. Slight variations of color are discovered, which later disappear, indicating that a dermatosis was present. The interest of this procedure is still more striking when it is applied to the study of effaced eruptions. After a variable duration of weeks or months, an exanthem disappears, but we know that the vascular system does not immediately recover its integrity of function. The tunics of the arterioles are surrounded still by a neoplastic infiltration, which permits of a reappearance of the eruption upon such slight provocations as a warm bath or exposure to cold air. There persist then, alterations which our eye alone cannot cognize. The blue glass here comes to our aid. By this means, effaced syphilides are frequently discoverable at the end of six months, and the author has even discovered them at the end of a year or more. Slight cicatrices are equally rendered visible. From the point of view of posthumous diagnoses and medico-legal examinations, this procedure will also not be

without its value. (Jullien employs a pair of spectacles or eye-glasses with cobalt-blue lenses.)

Etiology of Alopecia Prematura. Blaine (*Jour. Amer. Med. Asso.*, Mar. 11, 1899) discusses the causation of idiopathic premature alopecia. He looks upon heredity, hat pressure and other frequently-ascribed causes as improbable, and claims that the true cause is the too frequent use of the razor upon the face. The bald head can only be found among enlightened nations, and must, therefore, be caused by following the arts and customs of civilization. The use of the razor stimulates the growth of the beard to its utmost limit, whereas, unmolested, the beard grows but slowly. The constant beard growth produces a weakness in the scalp growth. The act of shaving also acts as a counter-irritation, causing a hyperemia of the face and detracting from the nourishment of the scalp. Every man should allow his beard to grow between the ages of 25 and 35, when premature alopecia is prone to develop. The author calls attention to the non-occurrence of idiopathic premature baldness in women, and in the beardless Indian tribes, in whom bald heads are unknown. The inhabitants of the island of Formosa have luxurious beards and hair, but the former are not cut or shaved. In conclusion, the author makes the statement that, "were there no shaving, there would be little or no baldness." He has not observed a single case in which cessation of shaving has not been followed by an arrest of the retrograde process.

Erythema Multiforme with Chief Incidence on the Buccal Mucous Membrane. Colcott Fox (*Brit. Jour. of Dermatol.*, Jan., 1899) exhibited, at the Dermatological Society of London, a case of erythema multiforme that had been shown at the October meeting, with a previous attack. The lips and pouches of the mouth were studded with vesicles, but the outbreak was less severe than before, and the palate was now free. The tongue had been much swollen, and was covered with mucus and debris, but did not present vesiculation. Just below the left knee was a large, rounded erythemato-bullous lesion, the size of a half-penny. The lesion was raised, circumscribed, of a lively red color, and its centre was occupied by a flaccid blister. On the opposite leg, but rather lower in site, was a similar lesion. Around the insteps were grouped a few smaller erythemato-bullous lesions. Similar smaller lesions were seen about the wrists. The exhibitor thought the nature of the case was now pretty clear, but the cause was very obscure.

The Treatment of Keloids by Scarification. Le Dentu (*Annales de Dermatol. et Syphilog.*, Jan., 1899) reports three cases of keloid cured by scarification. In the first case, three sittings at intervals of ten days sufficed to effect a disappearance of the growth. The second patient presented a keloid on the ear. The growth was ablated several times, each time recurring. Finally, the part was scarified seven or eight times, at intervals of several weeks. No recurrence. The third patient presented a keloidal acne at the back of the neck. Numerous cauterizations and curetting were without avail, all being followed by recurrence. After three scarifications, a complete cure resulted. No recurrence one year later.

PEDIATRICS.

UNDER THE CHARGE OF

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Contribution to the Etiology of Whooping Cough. Behla (*Deuts. Med. Wochensh.*, 1898, Vol. XXIV., No. 299) describes the infectious principle of whooping-cough, which he declares to be a virus which clings to the expectoration, and is a protozoon with the behavior of an ameba, increasing by division, and occurring in the form of spores, and not a bacillus, as described by Koplik, Czaplewski and Hansel. The usual situation of the parasite is the tracheal mucous membrane. During the catarrhal state it occurs in less frequency; but this changes in character as the period of the cough increases; and during the convulsive stage, a large number of round, ovoid, shining bodies are seen, lessening as the cough subsides. He refers to the work of Deichler and Kurloff.

Contribution to the Symptomatology and Diagnosis of Cholelithiasis in Infancy and Childhood. Wendel (*N. Y. Med. Rec.*, 1898) contributes to the study of calculi of the gall bladder, and calls attention to the fact that the custom of using an abdominal binder upon new-born infants, hindering the descent of the diaphragm, would seem a most effective method of inducing biliary stasis and favoring the invasion into the biliary passages of pathogenic micro-organisms. The extreme activity of the digestive and respiratory system enables infants to escape cholelithiasis, as a rule; nevertheless, the disorder is more frequent than has been generally taught. The paper is based upon the careful observation of 16 children under eight years of age; the diagnosis being corroborated either by detecting the calculi in the intestinal evacuation, or on the operating table, or, in two instances, by autopsy. Pain is so frequent a symptom of intestinal disorders in children, and so little attention is given to the inspection of alvine and urinary discharges, that cholelithiasis is often overlooked. He urges that the surgeon should recognize the importance of an obstructed cystic duct, common duct, or ulcerated gall bladder, as certainly as of a diseased appendix. He divides the symptomatology as follows: 1. Cholelithiasis with intermittent obstruction of the bile passages (typical gall-stone colic). 2. Cholelithiasis with hydrops cystis fellae. 3. Cholelithiasis with cholecystitis, but without active symptoms of obstruction (empyema cystis fellae). 4. Cholelithiasis with perforation of the gall bladder and extravasation into the peritoneal cavity, with peritonitis. 5. Cholelithiasis with lodgment of calculi in the common duct. The diagnosis is carefully reviewed. As to the method of palpation, he gives the very practical suggestion that it is best done in young infants in a warm bath, during which time the subject is

accustomed to submit to manipulation without revolt, and is properly relaxed. Vomiting is a pretty constant symptom, persistent and very exhausting; he has never observed stercoral vomiting in children during gall-stone colic. Convulsions are frequently observed, and he asserts that in young children vomiting attended by convulsion and without fever must always be considered significant of some form of colic. Jaundice, he regards as rare, or slight. Gmellin's test is sometimes negative, but in all doubtful cases the urine should be evaporated to one-tenth before testing.

Appendicitis in Children. McGuire (Paper before Med. Soc. of Va., Sept. 1, 1898) reports nine cases of appendicitis in children, surgically treated, occurring in children from four to eleven years of age, with two deaths. The deaths occurred in cases markedly septic and practically moribund. He remarks that many cases ending in resolution are overlooked previous to the last five years; the symptoms being those of acute intestinal indigestion. The physician who looks and waits for typical symptoms of appendicitis will frequently err in diagnosis. The intensity of an individual symptom, which is easily misleading, is more marked in children than in adults. Pain is an especially misleading and variable phenomenon, which does not indicate the pathologic condition, maybe intense, as in a case of slight catarrhal appendicitis, and absent in the gangrenous form. Tenderness may be altogether absent, especially where there is gangrene, because the tissues, nerves and all, are practically dead; and it may vary most widely as to situation. Nausea is usually a more prominent symptom in childhood than in the adult; is not continuous, and, where it occurs in an acute form later in the disease, often marks the advent of perforation and the onset of sepsis. Fever is usually present, and is liable to be higher in the slight catarrhal forms, and to be absent, or subnormality may exist, in the more serious form. He lays great stress upon the facial expression, especially as indicating septic peritonitis. A potent fact in dealing with children is that an acute peritonitis very rarely occurs in them from any other cause than appendicitis. The same holds good in the adult male. McGuire claims that no case should be abandoned by the surgeon, because, though the case may die and impair his statistics, nevertheless, some hope always exists of recovery, and every possible chance should be furnished. The surgeon who operates on a case of extreme gravity, and saves the patient, deserves far more credit than the operator who saves nineteen out of twenty simple cases.

Lupus and the X-Rays. At the *Gesellschaft der Aerzte*, Schiff showed a patient to the members whom he had treated with the X-rays for Lupus erythematoses. The patient came to him with the entire left side of the face affected, while only one small isolated patch was to be observed on the right side. The rays were applied to the left side of the face for two months, with the result that all the infiltration has quite disappeared, leaving only a slight pigmentation over the site of the lupoid surface. It appears that the chemical action of the rays is responsible for this favorable result.—(*Med. Press.*)

THERAPEUTICS.

UNDER THE CHARGE OF

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Local Application of Guaiacol. Popow (*Russki Med. Vestnik.*, Feb., 1899) reports a number of observations of the action of guaiacol, applied locally. In 40 cases of typhoid fever, an average of 7 to 10 drops of guaiacol, either pure or mixed with equal parts of oil, were rubbed in on the shoulder. This was invariably followed within an hour by a fall of temperature lasting from two to three hours, accompanied by excessive perspiration, which weakened the patient to a very great extent. The pulse also became rapid and weak. In a few cases, where larger doses were used, the perspiration was followed by quite severe chills. In children, even very small doses had the same bad effect. In severe cases the temperature could not be lowered by guaiacol, although perspiration and chills were produced by even small doses. The same unfavorable results followed the use of guaiacol in relapses. In cases of typhoid fever complicated by catarrhal and croupous pneumonia, the application of guaiacol was found to exert an evil influence on the course of the disease. [In two cases, at least, it might have been partly responsible for the death of the patient.—ED.] In croupous pneumonia the same pernicious effect was noticed. In erysipelas the application was made in 23 cases. Here the results proved to be very beneficial. The large doses found necessary by the author were very well tolerated by the patients, excessive perspiration and chills being absent. The duration of the disease was limited to four or five days. In chronic pulmonary tuberculosis, the effect was prejudicial. In acute rheumatism, the only effect noticed was an amelioration of the pain. The author concludes with the following statements: 1. Guaiacol, applied locally in fevers, is a powerful antipyretic. 2. In typhoid fever, croupous pneumonia and pulmonary tuberculosis, the lowering of the temperature is followed by perspiration and chills, which weaken the patient and reduce the heart's action. Besides, it does not shorten the duration of the disease. 3. In erysipelas, the application of guaiacol had a favorable influence on the course of the disease. 4. In acute rheumatism, it is a good local analgesic.

A. R.

Investigation of Glycerino-Phosphate of Soda in Diseases of the Nervous System. Kahane (*Klin. Therap. Wochensch.*, Vol. V., No. 51) believes that this drug, theoretically, answers all a nerve restorant should, being a direct factor in the making up of lecithin, which, chemically, is neurin distearyl-glycerin phosphate, and meets the requirements better than drugs commonly used in neurotic cases, such as bromides,

valerian, etc., that only relieve for the time, but do nothing toward the restoration of the system. The best mode of administration is in combination with soda, potassa, lime, magnesia, etc., the dose being from about 2 to 10 grs., three times a day. The salts of the alkalies are soluble in water, making it easy to combine with other remedies.

The Treatment of Exophthalmic Goiter with Sulphate of Quinin. Paulesco (*Jour. de Méd. Interne.*, Dec. 15, 1898) agrees with Reynier, that exophthalmic goiter is not, properly speaking, a disease of the thyroid gland, as it is a disease of the blood-vessel system, a vasodilatation, causing cerebral congestion, with an increased activity of the thyroid gland, and other reflex symptoms. In the treatment of this trouble, a vaso-constrictor is called for, and one meeting the requirements better than all others is sulphate of quinin. He reports 3 cases, 1 in detail; all were greatly benefited by the treatment.

A New Urinary Disinfectant. Wilcox (*Med. News*, Vol. LXXIII., No. 20) has used urotropin ($\rho\omicron\rho\nu\tau\acute{\upsilon}$ and $\rho\epsilon\pi\omega$) and believes it comes nearer the requirements of a urinary antiseptic than any drug known at present. Its formula is $(C^2 H)_6 N^4$, and chemically is hexamethylentetramin. One of the best recommendations of this drug is that it renders alkaline uric acid, a property that few possess, and those that do are usually very poorly tolerated by the stomach, *i. e.*, copaiba, cubeb, benzoates, salicylates, etc., and these drugs are rarely used alone, as they require urinary sedatives to be administered with them, as belladonna or hyoscyamus, while urotropin acts better when administered alone, and is not subjecting the urinary tract to any unnecessary irritation. Case 1 was a man of sixty years, having aortic and mitral disease, had suffered from ascites some months previous, and now complained of frequent and painful urination, etc. Urine alkaline, contained albumin, casts, hyaline and granular, blood, few altered cells, considerable pus, and phosphates; he was given a long list of remedies without relief; finally, $7\frac{1}{2}$ grs. of urotropin, t.i.d., were ordered, causing marked improvement, reducing the pus, and giving the urine an acid reaction. Case 2, a man, 31 years, dyspepsia; urine always contained a white turbidity (phosphates), which he thought was semen; 10 grs. after each meal caused it soon to regain its normal appearance. Case 3 was one of urethritis in which it gave good results, in $7\frac{1}{2}$ -gr. doses, t.i.d., in conjunction with hydrogen dioxid and lime water, also a 1% silver citrate solution, locally. Case 4, a young woman, 24 years, with bladder and kidney trouble after labor. Urotropin gave good results. He concludes (1) that urotropin will produce no untoward symptoms, when not given more than 30 grs. per day. (2) It renders uric acid. (3) It inhibits bacterial growth. (4) A good urinary disinfectant.

Abortion by Means of Nitrate of Silver. Perlsee found a small stick of nitrate of silver, introduced into the os, a never-failing abortifacient. No bad results, as a rule, follow.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Studies in Serum Diagnosis. Cabot and Lowell (*Bost. Med. and Surg. Jour.*, Feb. 9, 1899) report the results of 376 Widal tests, at the Massachusetts General Hospital. Of 204 cases without history of typhoid, none reacted with a 1 to 10 dilution and a 15-minute time limit. Of 39 cases known to have typhoid, 13 gave Widal's reaction at varying periods after recovery. *Remarks on technic.*—The writers state that the experiments were carried on "without further laboratory facilities than form part of the furniture of a physician's office." A single drop of blood is mixed with 5 drops of water, using the same dropper. A drop of this mixture, added to a drop of bouillon culture, gave a 1 to 10 dilution. The authors conclude with the following summary: "(1) The Widal test can easily be carried out in out-patient work. (2) 204 cases of disease other than typhoid tested; all with negative results. (3) 39 cases of sure typhoid tested at periods of from 1 to 18 months after defervescence; 13 of these reacted positively, 1 at a dilution of 1 to 100. (4) 9 cases tested quantitatively; 1 case reacted at 1 to 1,000 for several weeks. No data of prognostic value obtained.

The Etiology and the Classification of Peritonitis. Flexner (*Phila. Med. Jour.*, Vol. II., No. 20, 1898) reviews classifications previously given, and analyzes in detail the post-mortem records of 106 cases of peritonitis. He regards the bacteriologic findings, post-mortem, as fairly reliable data upon which to base conclusions, and believes that the possibility of agonal infections need not militate against the value of post-mortem bacteriologic determinations. Of the cases observed, practically all were bacterial in origin, and the author evidently views chemical peritonitis as a "possible possibility." Various forms of peritonitis are first divided into (A) Primary, (B) Secondary. By the former "is understood a condition in which an inflammation, usually diffuse, of the serous cavity takes place without the mediation of its contained organs, and independently of any surgical operation upon these parts." The bacteria present may be brought to the peritoneum by the lymph or blood. It is possible that they may wander through the intact intestine, although the author views this possibility with suspicion. Peritonitis due to "phlegmonous inflammation of the abdominal walls, and perhaps certain acute pleurisies, are not included in this definition." Of the author's cases, 12 belong to this group. Of the 12, in 2 cases no bacteria could be demonstrated; in 4 cases, the streptococcus pyogenes alone; in 1 case the streptococcus pyogenes and the bacilli coli

com.; in 2 cases, staphylococcus aureus and albus; in 1 case each, micrococcus lanceolatus, bacillus proteus, bacillus pyocyaneus, and an unidentified bacillus.¹ (B) The secondary peritonitides are subdivided into the (1) exogenous and (2) endogenous. The former embrace the cases in which the bacteria "have, in large part, entered from without," examples of wound infection. Thirty-four of the reported cases belong to this group. Of the 34 cases, 25 are single infections and 9 multiple.

TABLE OF MICRO-ORGANISMS FOUND IN CASES OF EXOGENOUS PERITONITIS.

Total No. Cases.	Alone.	Com-bined.	TABLE OF COMBINATIONS.	No. Cases.
Staphylococcus aureus....15	12	3	Staphylococcus aureus and streptococcus	1
" albus.....3	2	1	" albus " "	1
Streptococcus pyogenes....10	5	5	" " and B. proteus....	1
Bacillus coli communis....7	2	5	" " and B. coli com....	1
Micrococcus lanceolatus...3	1	2	Streptococcus and B. coli com.....	1
Bacillus proteus.....1	0	1	" B. pyocyaneus and B. coli	
Bacillus pyocyaneus.....2	0	2	com. and B. pyocyaneus.....	1
Unidentified organisms....3	0	0	Micrococcus lanceolatus and B. coli.....	1
			" " and liquefying ba-	
			cillus.....	1

(2) *Endogenous peritonitis.* This is the commonest form of peritonitis. The bacteria present come wholly or in part from the intestinal tract. Of the author's cases, 60 belong to this class. One case is excluded. Of the other cases, 21 were single infections and 37 multiple.

TABLE OF BACTERIA FOUND IN CASES OF ENDOGENOUS PERITONITIS.

Bacteria.	No. of Cases.	Alone.	Com- bined.	TABLE OF COMBINATIONS.	No. Times.
B. coli com.....	47	9	38	Streptococcus and B. coli com.....	16
Streptococcus pyogenes....	39	7	32	" B. aërog. caps. and B. coli..	2
Staphylococcus albus.....	4	2	2	" and B. aërog. caps.....	1
" aureus.....	3	1	2	" and staphylococcus aureus	1
Micrococcus lanceolatus...	4	1	3	" and B. typhosus.....	2
Bacillus proteus.....	4	2	2	" S. aureus, B. typhi, pro-	
" aerogenes caps.	8	2	6	teus and coli.....	1
" pyocyaneus.....	3	0	3	" and B. proteus.....	1
" typhosus.....	3	0	3	" and unidentified organism	1
Unidentified.....	3	0	3	Bacillus coli and M. lanceolatus.....	3
				" " and B. pyocyaneus.	3
				" " and B. aërog. caps.....	2
				" S. aureus, and B. aërog. caps.	1
				Staphylococcus albus and orange sarcina	1
				" " and unidentified or- ganism.....	1

Mushroom Juice as an Antitoxin against Serpent Venom. M. Phisalix, as a result of various experiments, found that all kinds of mushrooms possess a substance which acts as an antitoxin against serpent venom. If the juice of the ordinary hot-bed mushroom is extracted by pressure or by maceration in water and inoculated into a guinea-pig, the animal is rendered absolutely refractory to serpent venom. The inoculation, however, seems to possess toxic properties which vary in degree, according to the size of the dose. In the rabbit, for instance, the injection of 25 c.cm. of mushroom juice is fatal, the animal dying from intervacular coagulation. To avoid these results, M. Phisalix tried filtering and boiling the juice, but, all the same, the toxic properties remained, although they were much diminished.

¹ There is evidently some error, as this accounts for 13 cases.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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Influence of the Milk Supply on the Spread of Tuberculosis.

Kanthack and Sladen (*Lancet*, Jan. 14, 1899) contribute a valuable summary of their investigation of 16 milk supplies in Cambridge, Eng. The authors took careful means to receive the milk in sterilized containers. They centrifugalized the specimens and inoculated guinea-pigs with the sediment and also with the creamy layer. Of 90 guinea-pigs inoculated, 23 died from tuberculosis (25.55%). Of these 23 guinea-pigs, 13 were inoculated with the creamy layer and 10 with the sediment. Of the 16 dairies examined, the milk of 9 caused tuberculosis. It was thus evident that more than half of the 16 dairies examined at that time, supplying 10 of the colleges in Cambridge, sent out milk containing tubercle bacilli in sufficient quantities to cause tuberculosis in guinea-pigs when the animals have been subjected to inoculation. Tables are appended giving in detail the methods of inoculation and the macroscopic and microscopic appearances. All the results were personally noted by Prof. Kanthack, whose death in the prime of life has called forth sympathy from every quarter of the globe.

Contagiousness of Tuberculosis. Just how dangerous intercourse with tuberculous persons may be, especially for children, is demonstrated by the following case, reported in the *Revue d'Hygiene*: In a public school in Blancaford, Spain, a consumptive teacher was appointed. His condition preventing him from obtaining lodgings elsewhere, he arranged a room adjoining the class-room for that purpose. It was in this room that the good-natured and very popular teacher was in the habit of assembling his favorite scholars after school. After a year's service, he died. Three months later, one of the favorites also died of acute tuberculosis, to be followed in five months by his brother. Both were children of healthy peasants, and had, before the arrival of the phthisical teacher, been robust and well. In about the same period of time, two other healthy scholars, who were accustomed to attend these "afternoons" of their teacher, died; one of them of tubercular meningitis.

Hygiene of Cycling. W. G. George, the famous runner and athlete, who established the mile record of 4 minutes 12 $\frac{3}{4}$ seconds, has recently expressed himself in English papers as to cycling, as follows: "My opinion is that no healthy and properly-trained man can completely collapse in a cycle race, because the whole of his muscular and physical system is not at work in unison, as is the case in running, walking, swimming, etc.; indeed,

I am almost inclined to think a good man could keep going for years on his cycle if he could but master sleep, and be putting up records at intervals, both for long and short distances, all along the line. With regard to which branch of exercise is most useful and healthy, and which the most harmful, I hold that cycling on the road for pleasure, if the rider is properly clothed and the pastime is not indulged in to excess, is a grand and most beneficial sport for man and woman; whilst cycle racing on the road or path is bad, and cannot be a healthy pastime, because the position of the body during racing is contracted and unnatural, and some of the organs must, in consequence, suffer. Then, again, some part of the muscular and physical system is practically doing nothing, and it is in this way that the great danger lies. The old-fashioned, severe methods used by our English trainers have ruined many a good man's health, and this applies itself to rowing more than any other sport. In conclusion, let me say that I have never seen a trained, healthy man reap any permanent harm from collapse, and I think it almost impossible for him to do so. Collapse simply means nature asserting itself. A few men may have the pluck to try and kill themselves by over-exertion, but when they try to do so, nature steps in and puts a stop to the business before the climax is reached. On the other hand, an untrained or unhealthy man, if he enters into any kind of violent work or contest, risks his life, or, at any rate, lays the seeds for no end of trouble."

SURGERY.

UNDER THE CHARGE OF

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Rupture of an Appendiceal Abscess During an Examination. Immediate Laparotomy; Recovery. Cathelin and Lévesque (*L'Echo Méd. du Nord*, No. 90, 1898) report a very interesting case in which an appendiceal abscess was ruptured during palpation in a weak child eight and one-half years of age. They point out the danger which is present in palpating, if by any chance the adhesions are slight or have but just formed. General peritonitis set in at once, and during the hour required to prepare for the operation, the symptoms became very marked. The operation was, however, successful. The ruptured appendix was found and removed, and the abdominal cavity thoroughly washed out with a large amount of sterile solution. The patient made a complete recovery. They agree with the consensus of best opinion in holding that the removal of the appendix, at any cost, is not always, or, in fact, ever, demanded, and that circumstances and the condition of the individual patient should be the guide. They attribute the success of the intervention in this case to the immediate operation, and

believe that little time should intervene between the onset of the symptoms and the operation wherever it is evident that the abscess has ruptured. Plentiful lavage is another point that cannot be too deeply impressed.

Subcutaneous Nailing in Fractures with Unusual Tendency to Displacement. Roberts (*Penn. Med. Jour.*, Dec., 1898) believes that it is proper for a surgeon with proper qualifications and a sufficient knowledge of regional anatomy to deliberately nail together the fragments by an aseptic wire nail, driven through the unbroken skin. He does not advocate this method for the treatment of all fractures, but only in those cases where the obliquity of the fragments, or some peculiarity of the fracture, makes it imperative to use some device other than splints to control the fragments. Splints should, of course, be used in addition. No one should attempt the operation who has not sufficient aseptic technic to make him able to perform abdominal operations with aseptic results. The author believes that this method will be found valuable in certain dislocations, such as dislocations of the clavicle from the sternum or from the scapula.

A Case of Scissors Legs. Cooke (*Brit. Med. Jour.*, Dec. 3, 1898) reports a rare case in which adduction of the left limb was so great that the patient was unable to stand in any other way than with the legs crossed, and could but barely separate them when in the supine position. The power of flexion and extension was, however, perfect. The gait was rolling, one limb being swung with difficulty around its fellow.

The Treatment of Erysipelas. Fisher (*St. Peters. Med. Woch.*, No. 38, 1898) makes a careful study of the various methods lately employed in the treatment of cutaneous erysipelas. As the result, he gives the following conclusions regarding the treatment by alcohol, which he has employed with unvarying success for the past five years in all cases where the local conditions permitted its employment: After the part had been carefully bandaged with two layers of loose bandage, 85% to 95% alcohol was poured on, till the bandage was well soaked, and the patient was instructed to keep them moist with more alcohol. The employment of from one to three quarts of alcohol generally sufficed to produce the cure. The course of the disease was checked; suppurative processes, though not always checked, were rendered more amenable to operative treatment, and healed rapidly. In the 25 cases treated, there was no gangrene present, and no deaths occurred. The success obtained by various other authors fully justifies the author in his belief in the method. Its adaptation to the treatment of phlegmonous and other severe inflammatory processes shows that it has a wider field than the one he points out.

The Treatment of Congenital Talipes. Garrison (*Jour. Amer. Med. Asso.*, 1898) shows the importance of examining infants immediately after birth for any lack of balance in muscular development. The three cases he reports show how valuable the results of early treatment in these cases may be, and teach us that early, well-directed treatment by massage,

employed by the mother, will produce all that can be desired in the treatment of many of these cases, even in the hands of a general practitioner in the country.

A Case of Partial Removal of the Stomach. Lambert (*L'Echo Méd. du Nord*, No. 92, 1898) reports a case of removal of the stomach for cancerous disease. The pyloric orifice was found to be nearly closed, but there was no glandular involvement. Although the patient was cachectic and in a weakened condition, it was determined to remove it, or, at least, the greater part. The patient did not recover from the shock of the operation, and died the same day.

Localization and Removal of a Bullet from the Brain. Burkhardt (*Wüittenb. Corresp.-Blatt.*, Nos. 35 and 36, 1898) reports an interesting case in which a revolver bullet was located in the brain by means of skiagraphs taken in the antero-posterior and lateral directions. The operation showed the localization to be absolutely correct. The bullet was removed and the patient made a perfect recovery, with absolute restoration of function.

The Application of the Roentgen Ray in the Diagnosis and Treatment of Coxalgia. Josseraud (*Lyon Méd.*, No. 46, 1898) has fully demonstrated the value of this method of diagnosis in the determination of the exact condition present in cases of coxalgia, and the beneficial influence which it has had upon the treatment in these cases. He has shown that the skiagraph will demonstrate the presence of osseous lesions and detect sequestra, making it possible to determine the exact condition of the bone and the situation of the lesion, so that if it is simply cartilaginous, or in the incipient stage, it can be treated by extension and rest, while the presence of any grave osseous lesion makes it possible to operate and remove the sequestrum or diseased area of bone before symptoms are present that would indicate it under other circumstances.

Treatment of Elephantiasis with Calomel. Professor Pospelow employs hypodermic injections of calomel in liquid vaselin in this affection. In a boy, 8 years old, suffering from elephantiasis of the right leg, presented before the Moscow Society of Dermatology and Venereal Diseases, six injections of calomel (0.05:1) softened up the leg, allowing more freedom of motion. The size was reduced 6 cm.

Symptoms of Poisoning by Boracic Acid. S. Grumpelt communicates to the *British Medical Journal* a note on a case where 3 to 4 irrigations of the bowels by boracic acid solution (a tablespoonful to a pint) were followed by headache, slight nausea, and intense dryness of the skin. On discontinuing the injections the symptoms ceased, to commence again with their resumption.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Latent Encysted Lacunar Tonsillitis (De l'Amygdalite Lacunaire Latente, Enkystie). De La Combe (*Rev. Hebdom. de Laryngol.*, etc., No. 50, 19th year) defines this affection as "a catarrh of the lacunar cavities of the tonsil in which accumulate the various products of desquamation and secretion. These become encysted and tend to ulcerate if let alone." It is rare in childhood, frequently seen from the fifteenth to the thirtieth year, but is not often found after forty years of age, due undoubtedly to the fibrous change the tonsil undergoes. It usually occurs in the spring and autumn. The condition exhibits three stages—of catarrh, of encystment, and of ulceration. It begins insidiously, especially seen in "chilly" persons subject to sore throats or tonsillitis. It is differentiated from abscess by the absence of systemic involvement, freedom from pain, the character of the cyst wall and its contents, which are not purulent. Treatment consists in laying open the cavity, with biting forceps, applying a solution of iodo-phenique, and ordering an antiseptic gargle. Or an opening may be made with the galvano-cautery, the cavity mopped out with chlorid of zinc, 1-20, and a gargle of "borax-bromuri" used frequently. If ulceration has taken place, the area involved should be curetted and removed with cutting forceps and an antiseptic solution applied. Gargles should be used as before.

[A gargle that will be found useful in such cases for its healing and antiseptic effect as well as for the relief it affords to the soreness following operation is

R Cocain,	gr. viij.
Fld. hydrastis (colorless),	fl.3iv.
Hydrogen peroxid,	fl.3iss.
Ext. hamamelis (colorless),	
Aquæ cinnamomi,	aa fl.3ij.

M.—Sig.—Two teaspoonfuls as a gargle every two hours.—Ed.]

Contraction of the Nasal Orifice and Collapse of the Alae.

Guye (*Munich. Med. Wochens.*, No 26, 1898), explains the collapse of the alæ of the nose by the diminution of the tension of the alæ on the one hand, and on the other by the irregularities of the septum in the region of the plica vestibuli. The diminution of the tension of the alæ is determined by the softening of the cartilage, perhaps due to the weakness of the muscles during sleep or in facial paralysis. Feldbauch proposed a simple instrument for preventing this collapse of the alæ, especially during sleep. The author uses instead two small rubber tubes 6 or 8 mm. long and 2 to 6 mm.

wide, introduced into the nostrils and held in position with a thread. Study of comparative anatomy has shown the author that the plica vestibuli is vertical in man only. In the monkey its direction is horizontal, so that in these animals collapse of the alæ does not produce occlusion of the nostril, but a division of the vestibule into a superior and inferior portion. (Abstracted by Jankelevitch in *Rev. Hebdom. de Laryngol.*, etc., No. 50, 19th year.)

[I have used for a number of years tubes of silver adapted to each case for this purpose with satisfactory results.—Ed.]

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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The Causes of Ophthalmoplegia. Kollock (*North Carolina Med. Jour.*, Feb. 5, 1899) reports a case of this nature in which there was a difference of opinion as to the etiology, different consultants referring it to syphilis and tuberculosis, respectively. In commenting on the case, Kollock makes some very interesting remarks. He says that nuclear paralysis does not necessarily involve every muscle supplied by the third nerve, while a growth pressing upon the trunk may do so, causing total paralysis. When the trunk of the fifth is involved, not only are the motor and sensory fibres affected, but neuro-paralytic ophthalmia frequently follows, on account of the damage to the Gasserian ganglion. The eye generally escapes when the tumor is in the pons. Gowers mentions that semi-convulsive paroxysms of coughing sometimes occur in diseases of the pons, which fact may account for the choking, or "gagging spells," from which Kollock's patient at one time suffered, but from which he has been free for more than two years. Tubercular growths may occur at any age up to 70, but are more common in early life, three-fourths occurring before the age of 20, and one-half of all cases before 10 years (Gowers). In adults, signs of phthisis are rarely absent when tubercular growths are present in the brain. Syphilitic growths are probably more frequent than reported, as they are generally amenable to treatment, but of non-syphilitic growths, tubercular and sarcomatous constitute four-fifths of the intra-cranial growths. Tubercular growths are found most often in the cerebellum, and next in the pons, while syphilomata occur generally in the cerebrum or pons, and rarely in the cerebellum and corpus striatum. Syphilitic growths occur usually in the cranium, between the fifth and twelfth years after infection, though they may appear sooner. In Kollock's case there was a strong family history of tuberculosis, but many important diagnostic symptoms were absent, as there were no signs of this disease in any portion of the body. His health has improved, he has gained flesh, eats and sleeps well, and has never been obliged to give up his work, but, on the contrary, has been subjected to increased mental and physical strain by the political campaigns in which he

has taken part, and his duties as a member of the State Legislature. A tumor that grows rapidly and then becomes stationary is likely to be tubercular, while a very gradual development is not likely to be due to syphilis (Gowers). In Kollock's case, the apparently slow development of symptoms does not necessarily exclude syphilis, as the patient was put on specific treatment by Drs. Knapp and Koller, in New York, in 1891 or 1892, which may have possibly delayed the progress of the disease.

Successful Operation for Extreme Myopia. Carter (*Lancet*, Jan. 14, 1899) reports a remarkable success in an operation of this nature. The patient was a young lady who had been under his observation for 18 years, during which time she had progressively-increasing myopia. At the time of operation her refraction was: Right: —S. 18.0 —C. 6.0 ax. 180; left: —S. 12.5 —C. 6.0 ax. 180. Her correction gave her about $\frac{8}{20}$ vision, but she was almost blind without glasses. Both lenses were needled and extracted, and an attempt was made to correct the high degree of astigmatism by large incisions in the sclero-corneal margin, perpendicular to the vertical meridian. The result was astonishing; the patient was able to bicycle without glasses. Her unaided distant vision was better than it had ever been with glasses, and with her slight correction (Right: +S. 1.50, +C. 0.5 ax. 90; left: +C. 1.5 ax. 90) she had perfectly normal sight for the first time in her life. The eye-balls were deep-set, quite like hyperopic eye-balls, and there was no extensive crescent. These facts, together with the enormous change made in the refraction, gives great weight to Carter's conjecture that the myopia was likely in a great measure lenticular, due to a high index of refraction. If Carter had carefully studied the corneae, as should be done in all such cases, this question could be definitely settled. There is no doubt that this type of myopic case is the ideal one for operation. There is little use in operating for cases in which there is extensive posterior staphyloma or choroidal disease. What little optical gain is to be expected is offset by the dangers of retinal detachment, hemorrhage, prolapse of fluid vitreous, etc.

The Estimation of the Size of Retinal Images. Sullivan (*Med. Review*, 1898) in a paper on the optical functions of the lens, recalls the following rules for the estimation of the size of retinal images, the distance of projection, and the size of the object producing a certain image: 1. To find the size of retinal images when the height and distance of object are given, as, What is the size of a scotoma that produces a blind spot in the field of vision measuring 30 mm. at 300 mm. distance? Multiply the height of object by the nodal distance and divide by the distance $\frac{30 \times 15}{300} = 1.5$ mm., the size of scotoma. 2. To find the height of the object when the retinal image and distance are given, as, What should be the diameter of a blind spot produced by a scotoma 1.5 mm., situated 300 mm. distance? Multiply the distance by the retinal image and divide by the nodal distance $\frac{300 \times 1.5}{15} = 30$, diameter of blind spot. 3. To find the distance at which the object must be placed in order to produce a retinal image of a given size, at what distance should an object 30 mm. in height be placed in order to produce a retinal image 15 mm.? Multiply the height of the object by the nodal distance and divide by the size required $\frac{30 \times 15}{15} = 300$ mm.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Syphilis Treated by Intravenous Injection of Cyanid of Mercury. Chopping (*Lancet*, Feb. 13, 1899) reports 84 cases of syphilis treated by the intravenous injection of a 1% solution of cyanid of mercury. The mercury was administered in the primary and secondary forms of the disease, about 20 minims daily, the length of the treatment in the various cases lasting from 4 or 5 days to 2 months. Very good results were obtained. It is for the following reasons that the author claims special advantages for the method: As the injection is made daily, the patient is under constant observation; the exact quantity of mercury injected is known; not so where inunctions or pills are used; as the drug is administered by intravenous injection, the patient is more rapidly brought under its influence than when administered by mouth or skin—a marked advantage where it is necessary to produce the full effect of the drug as speedily as possible, in such cases as those with iritis, otorrhea, ulcerated laryngitis, etc.; the rapidity with which the serious lesions and visible evidences of the disease clear up; and the usefulness of the treatment in cases which do not respond to the ordinary methods of treatment.

Treatment of Urethral Discharges. Parrot (*Charlotte Med. Jour.*, Feb., 1899) reports the best results with the Valentine method of treatment in gonorrhea. He irrigates, on the first day, with a 1-3,000 potassium permanganate solution, and the same until the fourth day, when, in conjunction with the anterior injection, he gives an intravesical irrigation. The day following, only the penile urethra is treated; after that, all irrigations are intravesical. He varies the strength of his solution from 1-3,000 to 1-6,000, according to the case and symptoms. Internally, salol, grs. v., is given 3 or 4 times a day. If there is much ardor urinæ, a solution containing benzoate of soda and citrate of potash is given. Dr. Parrot reports several cases cured in from 10 to 16 days. In cases to which the irrigation treatment cannot be given, he prescribes a solution of protargol, $\frac{1}{2}$ % to 3%.

The Anti-vaccination Movement. An international congress of the German Anti-vaccination Society will take place in Berlin on the 18th, 19th and 20th of June. Dr. William Tebb has promised to be present.

GYNECOLOGY.

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Post-Operative Insanity. Rohe (*Amer. Jour. of Obstet.*, March, 1899) says that the delirium traumaticum was known to surgeons before the time of Ambrose Pare. It, like milk fever, was simply a manifestation of septic infection. Billroth was the first to indicate that this nervous delirium might persist in the form of a true psychosis. Other operators reported cases, the majority of which were in women and following operations upon the reproductive organs. Many of these cases have not been published with a sufficient degree of fulness to determine whether they were insane or not. In all the cases of mental disturbance reported as post-operative, it is found that there is little difference between the two sexes in number affected. Graver forms, however, in the majority of cases, follow operations on the abdominal and pelvic organs in women. A comparatively large proportion follow plastic operations upon the uterine or vaginal outlet. Most writers express the opinion that the removal of the ovaries, or these organs with the uterus in women, and of the testicles in men, has a mysterious influence upon the psychic character; that the sense of loss of virility or muliebrity produces such profound mental depression as to cause melancholia. Aside from the fact that melancholia is the least frequent form of mental disturbance following operations, it may be asked why the removal of double cataract or a molar tooth should produce similar effects? In the writer's opinion, excluding cases of hereditary or acquired psychopathic predisposition, the mere removal of the ovaries or uterus would have no greater psychic effect than the amputation of an arm or leg. [This abstract is from the last paper written by Dr. Rohe, and it seems like a voice from the grave of one who, in his life, had ample opportunity for thorough study and observation of the class of cases herein described.—Ed.]

The Physical and Moral Effects of Absence of the Internal Female Sexual Organs. Munde (*Amer. Jour. of Obstet.*, March, 1899) says that a true hermaphrodite possessing the distinctive organs of either sex, and therefore capable of performing the procreative functions of both male and female has, so far as his knowledge is concerned, never been demonstrated. The instances of normal female build, with apparent complete absence of uterus, ovaries and tubes, and normal vulva and vagina, are far less common than those presenting the same irregularities, together with absence of the vagina. Usually, when I have found the uterus, ovaries and tubes missing, with a normal vulva, the vagina has also been absent.

The failure upon the part of Nature to effect the normal development of tubes, ovaries and uterus from Muller's ducts in the Wolffian bodies, usually includes the vagina in the failure. Nature does not appear to pursue any order or system in these errors of development. An individual in every respect, physically and morally, so far as the latter attributes can be judged; a perfect woman, may still lack the one essential factor of femininity, the ovaries, and, instead, possess the organs which stamp the individual a man. On the other hand, numerous cases are on record of perfectly-formed women, with normal external genital organs, but lacking vagina, uterus, ovaries and tubes. The mere absence or rudimentary development of these organs need not produce any symptoms whatever, disagreeable or otherwise. Occasionally a woman will suffer from menstrual molimina, so severe and frequent in character as to render her an invalid and justify extreme measures for her relief. Nothing but the removal of the cause, the rudimentary ovaries, remains. It is sometimes difficult in these cases to find the rudimentary ovaries, as they may be situated retroperitoneally. An attempt to incite either rudimentary ovaries or uterus to growth and activity is hopeless. A double uterus and vagina may be let alone, providing each half is capable of doing its duty. The septum does not prevent intercourse, conception, or normal parturition. Women have been known to give birth, successively, to a full-grown child from each half of a double uterus and vagina. Pregnancy in the rudimentary horn of a double uterus usually terminates in early rupture and dangerous intraperitoneal hemorrhage, precisely like ectopic gestation. When one-half of a double uterus or double uterus and vagina is imperforate, the retention of menstrual blood in the closed canal will require its free opening. Stenosis and atresia of the vagina, and imperforate hymen of course require operation for surgical restoration of the calibre of the canal, and which is usually devoid of difficulty or danger.

OBSTETRICS.

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Statistics of the Service of the Accoucheurs of the Charite. Porals and Macé (*L'Obstetrique*, Nov. 15, 1898) give statistics for the years 1895, '96, '97, embracing 2,804 deliveries at the Charité, Paris. The following are some of the deductions: Delivered at term, 2,661; 22 shoulder presentations, 3 terminating without interference; 69 breech. The following were

the operations: Forceps application, 63; of these, in 54 cases the indication was uterine inertia. Version internal, 18; version external, 5; symphysiotomy, 10; embryotomy, 2, the indication being a dead child, shoulder presenting; perineorrhaphy, 116.

The Treatment of Puerperal Fever. Martin (*Birming. Med. Review*, Jan., 1899) considers the methods of treatment that have proved efficacious in his experience. A careful bimanual examination is necessary to ascertain the severity and extent of the local inflammation. It then resolves itself into the treatment of the following conditions: (1) Endometritis, (2) salpingitis, (3) pelvic cellulitis, (4) peritonitis, either local or general. Endometritis: Thoroughly scrape out and disinfect the uterine cavity. For washing out the uterus, iodine water (3i to the pint) is recommended. A long strip of iodoform gauze is next to be carried up into the uterus to act as a drain. Salpingitis, pyosalpinx and pelvic peritonitis: Vaginal extirpation of the uterus and tubes, recommended by some, not advised, on account of the low general state. Where there is evidence of a collection of fluid behind or at the side of the uterus, the patient should be chloroformed in the lithotomy position, the pouch of Douglas should be freely opened and the collection of pus evacuated. The tubes may be palpated through the opening. If they be distended with fluid, they should be seized with forceps, drawn down and freely incised with scissors. Pelvic cellulitis: If there is no suppuration, no surgical treatment is required. Hot vaginal douches should be administered every six hours. If pus be present, operate through the vagina, opening the abscess cavity and draining. General peritonitis: Here we have to deal with a severe peritonitis, and also a severe septicemia. The prompt use of a calomel purge may save a patient's life. Most reliance is to be placed on the general treatment of suppuration. This general treatment consists of the employment of the following: Quinin by mouth, or enema, 5-gr. doses, repeated every 6 hours; cold sponging for a temperature of 105° F.; strychnin and digitalis for failing heart; alcohol, freely.

Diabetes Insipidus and Pregnancy. Vinay (*Lyon Mèd.*, Nov., 1898) gives some observations on diabetes insipidus, especially in its relation to the pregnant state. The facts which show the coincidence of diabetes insipidus and pregnancy are rare, hence, interesting. Those who have studied this relationship are Mathieu, Duncan, Bennett, Dodd, Esterle. Vinay quotes two cases in which the cause was nervous shock. In the first case, before pregnancy, 25 litres of urine were passed in 24 hours. During pregnancy, the amount of urine was reduced to 5 litres per day. Pregnancy proceeded to term. In the second case, there was a decided amelioration of the symptoms after pregnancy. Diabetes insipidus is not an absolute obstacle to fecundation, especially when the disease begins after puberty. When the disease precedes puberty, the menses are apt to appear late, or not at all. This latter is not a result of the diabetes. They are both dependent upon the same cause. The influence of diabetes upon the course of pregnancy is variable. Duncan and Esterle found that, in three cases, abortion occurred at the seventh month. Other observers have seen cases go on to full

term without any difficulty. Cases have been noted where polyuria has existed with pregnancy, and where the patient's weight diminished as pregnancy advanced. Delivery in these cases was followed by gain in weight and the passage of a smaller quantity of urine.

Contribution to the Study of Curettage in Retention of the Placenta. Vanverts (*L'Echo Méd. du Nord*, Jan., 1899) strongly recommends the careful use of the curette in cases of retained placenta. This was also the opinion of Gaulard. Sixteen cases are given by the author, somewhat in detail. Satisfactory recovery followed in all of these cases, three being complicated by infection at time of operation. Unless there is some marked contraindication, general anesthesia should be employed. It can be done more completely and more quickly in this manner. In cases of metritis and endometritis, we employ general anesthesia, and we have here to deal with an endometritis. The curette is an instrument of danger in the hands of the careless. Dr. Vanverts lays down the following points for the use of the curette: It is first necessary that the cervix be dilated or dilatable. Sudden dilatation is inferior to gradual dilatation, but is sometimes necessary. Vulva and vagina are always to be disinfected. A douche is now given, as sublimate (1-5,000), to rid the uterus of the liquids which may be septic. After the hands are thoroughly prepared, the index finger is introduced into the uterine cavity. This recognizes the presence of the membranes or portions of placenta. The point of attachment is found, if possible. The next step is to introduce the curette cautiously into the uterus. It is carried to the fundus, and then the uterus is curetted from fundus to cervix. Particular care is necessary, as the uterus is enlarged and soft at this time, and but slight pressure is sufficient for perforation. If any harm is done, it is done on the ascent of the curette, not on its descent. After the operation, again flush the cavity of the uterus to remove the loose debris, and employ glycerin-iodin tampon. When the infection is old and intense, the results are not so happy, and death may result, in spite of prompt and careful treatment.

The Treatment of Quinsy. Few, if any, of the minor ailments can cause more misery than a neglected quinsy. Dr. J. A. Stucky, of Lexington, Ky., in a paper on "Peritonsillitis or Quinsy: Cause and Treatment," says that seven out of ten prominent authors mention rheumatism and gout as the most prolific causes. Dr. Stucky believes that the majority of cases, if seen within 48 hours, can be aborted; that is, suppuration prevented. He prescribes 5 to 10 grs. each of calomel and salol, followed, in 6 hours, by a saline cathartic. After purgation he gives $7\frac{1}{2}$ to 10 grs. of lactophenin with 3 to 5 grs. of protonuclein, every 2 to 4 hours, until the temperature is normal. Local treatment is less important, but blocked follicles may be cleaned out with a probe, followed by an antiseptic spray. For painful deglutition, apply 10% solution of cocain and resorcin with a brush or cotton-covered probe, to the pillars of the fauces, every 2 hours, if necessary.

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The conscientious study and practice of medicine should conduce greatly to humility, since the things we do not know are still so numerous and important. Take, for instance, rheumatism, which is so prevalent at this season in our damp climate; and also the diseases that resemble it, including gout, rheumatoid arthritis, syphilitic and tubercular joint affections, and the non-traumatic forms of neuritis, involving nerves close to joints. It is by no means always possible to differentiate these certainly from one another in their earlier stages, and, as to their etiology, we are still all at sea regarding most of them, excepting, of course, those known to result from syphilis and tuberculosis. A number of investigators have reported various bacilli, diplococci, etc., as each pathogenic in the case of rheumatism. Singer (*Berlin. klin. Woch.*, No. 31, 1897) found staphylococci or streptococci in the majority of ninety-two cases of acute articular rheumatism studied by him, and in a later communication (*Wien. klin. Rundschau*, No. 36, 1897) expressed a belief that the joint symptoms are due to a toxin carried to them in the blood. In the absence of positive knowledge, all manner of theories are put forward, each in turn to be disproved and displaced by a new one of equally inconclusive character. Lactic acid, which at one time was generally accepted as the probable cause of rheumatism, is now scarcely ever mentioned in that connection, and a recent writer even claims that by administering daily forty drops of this substance, he has been able to effect a cure of rheumatoid arthritis in the case of one patient who had been confined to bed for a year and suffered with this usually incurable disease for ten years. Thus rudely in these iconoclastic times are cherished doctrines shattered and new and revolutionary methods of treatment urged upon us. Our old friend (or, rather, enemy), sciatica, which was formerly classed among the neuralgias, is now generally believed to be nearly always a neuritis, and there is a growing suspicion that most so-called neuralgic affections are not properly to be considered as functional merely, but probably a result of inflammatory or

degenerative processes. Indeed, they have long been held to be, more often than otherwise, a result of the rheumatic diathesis, whatever that is.

This brings us to the practical consideration that the rheumatoid affections, especially the chronic forms of them, are frequently ameliorated markedly by measures which cleanse the alimentary canal of poisonous bacterial products as well as, probably, a large proportion of the bacteria themselves. A smart mercurial purge often accomplishes much in relieving the pains and lameness, while a thorough washing-out of the colon, with even plain warm water, is usually still more effective, though a long-continued use of this method is not advisable. It is noteworthy, in this connection, that the alkalies, which were formerly mainly relied upon in such diseases, act by neutralizing the excessive acidity of the body fluids, which always results from abundant fermentation or putrefaction in the gastro-intestinal tract, while our modern salicylates, in all their various forms, probably owe their efficacy mainly to their antiseptic power.

In treating these stubborn affections, it is of primary importance to see to it that the digestive functions are properly performed, so as to prevent fermentation, and that the bowels are thoroughly evacuated. Then the urine needs to be sedulously watched. When indican, or the aromatic sulphates, are in excess, we may safely infer excessive putrefaction somewhere in the system, and generally in the bowels, though experience shows that there may be a serious degree of toxemic infection without such warning signs being present. But, probably, in all cases the total acidity of the urine will have been unduly high—often from 50 to 100—for days, if not weeks, before an outbreak of rheumatism, or of rheumatic neuritis. Whenever the urine, therefore, becomes unduly acid, it is desirable to have the patient drink larger quantities of pure, soft water between meals and take some alkaline remedy.

Since writing the foregoing, we have received from Dr. William Ewart, of London, the manuscript of his most interesting remarks on the rheumatoid affections, which will be found under Original Papers in the present issue of the *INTERNATIONAL*. They constitute a masterly discussion of the subject and shed new light of importance upon it. They emphasize strongly the importance of the fact, to which we have prominently called attention above, that the chronic joint diseases are, in some of their forms, and in their earlier stages particularly, very difficult to differentiate. The typical forms are easily diagnosticated, and as to the advanced stages of all, one could scarcely be mistaken; but, as Dr. Ewart shows, there are borderland cases concerning which even the most expert diagnosticians must remain for a time in doubt. Especially important is his advice that in the doubtful cases we should prescribe the strengthening diet and tonic medication suitable for arthritis deformans, rather than impose the depressing regimen which would be more appropriate to well-defined gout.

**Dr. Ewart on
Gout, Rheumatoid
Arthritis, etc.**

Much discussion has been devoted lately to the subject of various proposed methods for the governmental regulation of marriage and other attempts to reform society by law. Dr. A. H. Burr read, in the section on State Medicine, at the last meeting of the American Medical Association, a paper entitled "State Regulation of Marriage for the Prevention of Communicable and Hereditary Disease." The advocates of attempts to make all men moral, upright and healthful in body and mind by legislative enactments seem to be wholly unaware of the limitations in this direction. Some of the most efficient causes of the degenerative tendencies which are apparent in modern civilized society are to be found deeply rooted in the customs and prejudices which have been growing for centuries. Prominent among these, unquestionably, is the increasing practice of celibacy and the fact that even among men who look forward to marriage as a consummation to be desired and ultimately achieved, it is becoming more and more the fashion — perhaps we should say a social necessity — to postpone it till they have become well established in life, which means often till they have reached middle age, and, even supposing that they have been so fortunate as to escape gonorrhea and syphilis, are no longer in a condition of bodily health to procreate the most robust offspring. Celibacy and deferred marriages conduce to masturbation and other forms of unnatural sexual gratification, and are the chief causes of prostitution. The resultant diseases are sapping the vigor of our most highly-civilized races.

The remedy is not to be found in still further restricting marriage by vexatious governmental regulations, no matter how beneficent the intent, since this would increase the vicious alternatives above mentioned, and thus aggravate the disease. Let our would-be reformers organize everywhere societies for the promotion of early marriages, and strive through such agencies to beget a healthier sentiment concerning the relations of the sexes toward each other. Let them by this and all other practicable means try to abolish the maudlin sentimentality that makes of woman a kind of semi-goddess, too ethereal and delicate to be permitted to bear her share of the burdens of life, and, by thus enthroning her, disqualifies her for wedding any man not endowed already with a generous income.

Physiology shows the sexes, in mankind as among the animals, under normal conditions, to be about equally endowed with muscles, nerves and physical endurance. There is no physiologic reason, therefore, why the man and the woman should not bear almost equally the burdens of maintaining the home. Even child-bearing and suckling their young do not interfere much with the activities of the females of the savage races or of the animals; and there is no sound reason under the heavens why our women of the middle and higher classes should be so dwarfed and enervated by dress, lack of exercise, confinement in close rooms, perverted mental and moral training and otherwise, as to consider themselves, and, in most cases, actually to be, frail, dependent creatures, unfit to do the work of a modern home with a

**Early Marriages as
a Cure for Social
Evils.**

minimum of outlay for servant hire, while the poor husbands are struggling to build up a business and get established in life.

It is not among the poorer classes that the most immorality is found, and the explanation is that with them the men find real helpmeets and marry young. Let the social reformers ponder over this phase of the marriage question. If the daughters of the land, high and low, even the most refined and cultivated among them, were taught to be strong, healthful and useful women, ready to marry the men of their choice, regardless of riches, and to help their husbands, as their mothers in many instances did before them, one of the vexed social problems would rapidly be solved.

Such indefinite terms as "dyspepsia," "colic," "womb-disease," etc., are necessary for the laity who know nothing about the pathology of diseases. Physicians even may need to use them sometimes in their explanations to over-inquisitive friends of the patient, and, like "malaria" and many similar elastic expressions, they are convenient makeshifts when a satisfactory diagnosis has not yet been reached. But surely the time has come when, in communications to medical journals and in clinical lectures for the instruction of medical students, such indeterminate expressions should be discarded, or, at least, used with reference to symptoms only, and not as descriptive of definite entities.

Exploded Theories. The Carlsbad Cure.

Dyspepsia means difficult digestion, whether the discomfort takes the form of bloating, flatulent eructations, heartburn, sour risings, rumblings, the passage of gases from the bowels, distention, weight, or dragging in the abdomen after eating, or any form of pain or inconvenience which results from the ingestion or digestion of food or drink. These symptoms may concern the disturbances of either the secretory or motor function of the stomach, a bacterial infection of that organ, or any one of numerous inflammatory, degenerative or malignant diseases of the same — morbid processes regarding which there is now an abundance of fairly precise and reliable knowledge; or they may concern an equally large number of different diseases in the small or large intestine, liver, or pancreas, as to which we yet know far less; or, finally, they may probably result from a simple displacement of the kidneys or, much more rarely, from reflex disturbances of the gastric, hepatic, pancreatic or intestinal secretions.

As there is no one pathologic condition answering to the name dyspepsia, so many of the old theories about the origin and proper treatment of this mythical entity necessarily rest upon an unsubstantial foundation. Especially is this true of the generally accepted teaching as to the effects of alkalies and acids. For example, Dr. William Murrell, who has attained a wide reputation as an authority upon therapeutics, is quoted in a clinical lecture, recently published in the *Medical Press and Circular*, of London, as follows:

"The treatment of cases of dyspepsia usually presents no difficulty. If there are, from time to time, failures, it is from the neglect to recog-

nize certain elementary facts which are familiar enough to every one who has had much experience of out-patient work. In the treatment of dyspepsia it is necessary to remember that alkalies increase acid secretions and decrease alkaline secretions, and that acids increase alkaline secretions and decrease acid secretions. This is the keynote to the situation."

It is a satisfaction to have this mischievous old fallacy thus clearly expressed, so that it may be the more easily and certainly refuted. In delicate or sensitive persons, quite moderate doses of alkalies, taken for a comparatively short time, are liable to lessen the quantity and acidity of the gastric secretion to a marked extent. We have often seen nutrition lowered seriously in this way. Every physician who studies the results of his remedies with the aid of frequent examinations of the stomach contents, can probably duplicate this experience. Large doses for a short time even, and medium doses continued for a long time, always decrease acidity and decidedly diminish the activity of the gastric glands, whether administered before or after meals. According to our observation, persons who have recently taken a full Carlsbad cure show gastric anacidity—at least, no free hydrochloric acid can be demonstrated in their stomach contents at any stage of digestion—and sometimes, when the patient had not been previously plethoric or over robust, the gastric secretion has remained markedly deficient for years afterward. The gastric glands, in many such cases, probably never again recover their normal activity.

On the other hand, it has been of late abundantly demonstrated that hydrochloric acid is a very active, and probably the most active, stimulant to the glandular secretion of the stomach. We have observed this result repeatedly, and the subject was somewhat fully discussed in a paper entitled "The Place of Hydrochloric Acid in the Treatment of Diseases of the Stomach," which appeared in the *INTERNATIONAL MEDICAL MAGAZINE* for October, 1898.

Indeed, the time is coming—and it ought to be here now—when it will be considered bad practice to prescribe a course of Carlsbad, Vichy, Bedford, or any other actively alkaline water for a patient without a previous determination of the secretory power of the stomach. Moreover, in important, especially in delicate, cases, chemical analyses of the gastric contents ought to be made at intervals during such a treatment.

EDITORIAL MENTION.

ATTENTION is called to an offer of the publishers for certain back numbers of the *INTERNATIONAL*. It appears on advertising page xiv.

DR. W. E. FITCH, of Savannah, contributed to the *Georgia Journal of Medicine and Surgery* for March an article entitled "Bicycle Riding: Its Moral Effect upon Young Girls and Its Relation to Diseases of Women." The writer thinks that the pressure of a badly-constructed, and also of a

wrongly-adjusted, bicycle-saddle often does harm both to the morals and health of women—particularly of young girls. He advises one special make of saddle, and to have it adjusted carefully to suit each rider, but leans to the opinion that, even with these precautions, the wheel is not a good form of exercise for girls. He considers it quite as productive of pelvic disease as the sewing-machine, which is so much condemned, and insists that it causes an unsymmetrical and disproportionate development of the leg muscles, so that the limb loses “its beautiful shapeliness.” Dr. Fitch’s suggestions as to the importance of properly-fitted saddles are wise and timely, and it may be assumed that nowadays this is rarely neglected. The experience of most physicians is, we think, more favorable to the bicycle. It has happened to us frequently to have young lady patients cease to need our services upon beginning to exercise moderately but regularly upon the wheel. Even from the esthetic point of view, we cannot agree with Dr. Fitch. Perhaps we are deficient in the artistic sense, but we have imagined that the “shapeliness” of so much of the feminine anatomy as is revealed by the bicycle costume is enhanced by this form of exercise.

DR. JOSEPH TABOR JOHNSON, of Washington, who enjoys at present the enviable distinction of being President of both the Southern Surgical and Gynecological Association and the American Gynecological Society, read an interesting paper at the meeting of the former body, held in Memphis, Tenn., December 8, 1898. It strikingly showed the recent remarkable change in the attitude of gynecologists with regard to the removal of the ovaries and tubes. It has been less than ten years since women were being unsexed at an alarmingly rapid rate for all sorts of actual and suspected ovarian affections. Some of these were real and serious, both organs being completely and hopelessly diseased. In other cases, one only was more or less damaged. In not a few, both ovaries were removed on suspicion, because of threatening nervous affections, such as insanity, epilepsy, etc. In other cases there was a partial involvement of one ovary, the remainder of which was sound, while the other was healthy. Yet, in all these cases, many operators removed both ovaries. Now all this is changed, and the preponderance of sentiment among gynecologists, both in Europe and America, seems to be in favor of cutting away only the diseased part of an ovary, while the sound part is saved. This practice was strongly advocated by Dr. Johnson in the paper above mentioned, entitled “The Conservative Treatment of the Diseased Ovary”; and we find, in the inaugural address of President Doran, of the Obstetrical Society of London, an abstract of which appeared in the *Medical Press* of March 8th, a similar tone of marked conservatism respecting most of the familiar gynecologic operations, which is in remarkable contrast to the doctrines held and acted upon, a few years ago. Mr. Doran, in his address, took strong ground against the removal of the ovaries for neurosis, fortifying his opinion by citing the published views of Howard Kelly and Weir Mitchell on this subject.

BOOK-REVIEWS.

THE TREATMENT OF DISEASE BY PHYSICAL METHODS. By Thomas Stretch Dowse, M.D., F.R.C.P.; Formerly Physician-Superintendent Central London Sick Asylum; President North London Medical Society, etc. New York: E. B. Treat & Co., 241-243 W. 23d St. Price, \$2.75. 1899.

In the treatment of chronic diseases, the trend is more and more toward the physical methods. Massage, electricity, baths, exercise, rest, diet, etc., are coming to be recognized as generally more effective, as well as safer in the long run, than a dependence solely or mainly on drugs. The volume before us is really a revised and enlarged edition of the author's standard work, entitled "Lectures on Massage and Electricity in the Treatment of Disease." Though popular in England, this admirable exposition of a most practical and important subject has not been so well known in the United States as it ought to be. It may be as well, therefore, to give *in extenso* the themes of which the author treats in each of the sixteen valuable chapters. These include: I. Massage: Its Principles.—II. Massage: Its Method of Application.—III. Massage of the Head and Neck, and the Parts in Association Therewith.—IV. Massage and Induction, Faradic Massage of the Skin.—V. Muscle and Nerve. VI. Massage of Venous and Lymph Circulations.—VII. The Weir-Mitchell Treatment.—VIII. Massage of the Chest and Abdomen.—IX. Massage in Nervous Exhaustion, Neurasthenia, and Hysteria.—X. Massage of the Spine and Back.—XI. Massage in Joint, Bone, and Bursal Affections.—XII. Massage in Sleeplessness, Pain, Dipsomania, Morphinomania, and Melancholia.—XIII. Massage in the Wasting Diseases of Children, and in the Diseases of Sedentary, Changing, and Advanced Life.—XIV. The Nauheim or Schott Treatment in Diseases of the Heart.—XV. Electro-Physics.—XVI. Electro-Therapeutics, Motor Points.

The most important part of the book, even for physicians, is that devoted to massage. It is to be feared that there is not a sufficient appreciation by the medical profession, outside the larger cities, of the value of this method of curing chronic disease. Most books on the subject are written by masseurs who are not physicians. When the authors possess the title of M.D., it is, as a rule, nominal only, their practical work being limited, nearly always, to massage, Swedish movements, and gymnastics, exclusively. But Dowse is a clinician of large experience, as every line of his writing shows. Hence the accuracy of his observations as to the efficacy of the physical methods and the value of his suggestions and directions for the general practitioner, as well as for the specialist in chronic disease.

It was not to be expected that this work should contain a notice of the observation recently made by the editor of the INTERNATIONAL MEDICAL MAGAZINE as to the effect of abdominal massage on gastric secretion. There had scarcely been time enough. But in subsequent editions the author will doubtless call attention to the fact that deep kneading of the epigastric region is one of the most powerful stimulants to gastric secretion, and is, therefore, as strongly contraindicated in marked hyperacidity as it is indicated in deficient secretion of the gastric glands. This subject was fully discussed in a paper which appeared in the issue of this journal for January, 1898. Many of the failures of massage to accomplish good results are due to a non-recognition of these special indications.

The Nauheim treatment of cardiac disease is ably discussed, and with the author's wide experience in the physical methods, he naturally emphasizes

especially the very valuable auxiliary which massage treatment can be made to the special baths and graduated movements against resistance, in even serious cardiac cases. There is a notion prevalent to some extent in both Europe and America among physicians who have not made a large use of massage, that this form of treatment involves a peculiar danger to weak hearts, and needs to be pursued with extraordinary caution in such cases. Dr. Dowse says (p. 317): "That massage relieves an overburdened heart, we have proved both by clinical and physiologic evidence; it stimulates the vaso-motor and respiratory centers, it tends to liberate oxygen from the hemoglobin, and it must be attended by the evolution of heat, and an improved metabolism." He advises, of course, that the patient shall not be subjected to any violent strain or tension; also that the treatment in the beginning should be of a light, vibratory character, and of not more than thirty minutes' duration. It would be well for the invalids of this country, if every physician in it could be induced to obtain and study carefully this valuable work.

A NEW TEXT-BOOK OF MECHANOTHERAPY, (MASSAGE AND MEDICAL GYMNASICS).

By Axel V. Grafstrom, B.Sc., M.D., late Lieutenant in the Royal Swedish Army; late House Physician, City Hospital, Blackwell's Island, New York. Philadelphia, W. B. Saunders. 1899. Price, \$1.

This is a veritable *multum in parvo*. In its 134 pages, supplemented by a full index, is contained an epitome of nearly everything of importance connected with the movement cure of disease. The author discards the usual French terms descriptive of the various procedures in massage, employing instead the English expressions—"palmar friction," "digital friction," "palmar kneading," "digital kneading," etc. Every physician needs to understand Mechano-Therapy, and should have either this little book or a still more complete one.

ATLAS OF EXTERNAL DISEASES OF THE EYE. By A. Maitland Ramsay, M.D., of Glasgow. New York, The Macmillan Company. 1898. Price, \$20.

This magnificent volume contains thirty full-page plates and eighteen full-page photogravures. Nearly every subject in the whole range of external diseases of the eye is included, and the more common affections are pictured several times. The illustrations are faithful clinical pictures, and are invaluable for reference. The accompanying descriptive text is most concise and graphic, and makes us anticipate the pleasure of a more extensive text from Dr. Ramsay's pen in the near future. His description of exophthalmic goiter is a masterpiece.

W. L. P.

FORMULAIRE DES MEDICAMENTS NOUVEAUX POUR 1899 (Formulary of New Medicines for 1899). Par H. Bocquillon-Limousin, pharmacien de 1re classe, lauréat de l'Ecole de pharmacie de Paris. Introduction par le Dr. Huchard, medecin des hopitaux. 1 vol. in-18 de 324 pages, cartonne. 3 fr. Paris: J. B. Bailliere et Fils. 1899.

French physicians are enthusiastic therapeutists, and are usually among the first to experiment with proposed remedies. This book summarizes much information about a large number of the newer drugs, concerning the virtues of, and indications for, which we in this country are largely dependent upon such not wholly disinterested communications as are vouchsafed to us by the manufacturers or introducers of them. It is a convenient duodecimo volume of 332 pages, with a full alphabetical index. The book would have been much more useful if it had been provided also with an index of diseases, in connection with the new remedies appropriate to them.

MEDICAL NEWS AND MISCELLANY.

Changes in The Northwestern University Woman's Medical School. Dr. Marie J. Mergler has been elected dean, in place of Dr. I. N. Danforth, resigned. Dr. Danforth has been elected *dean-emeritus*. The yearly course at this school has been changed from one of two semesters to one of four semesters, of twelve weeks each, commencing the first of July, October, January and April. Three semesters will be required; the other semester will be optional. The number of regular students will be limited to 100—25 in each class. They will be admitted to competitive examination for place in class, only after having complied with the requirements of the State Board of Health.

The Seventh Congress Against Abuse of Alcohol. The Seventh Congress Against the Abuse of Alcoholic Drinks was held in Paris, April 4th to 9th, 1899, under the patronage of the Minister of Public Instruction.

American Climatological Association. The sixteenth annual meeting of the association will be held in the hall of the Academy of Medicine, No. 17 West 43d Street, New York City, on May 9th, 10th, and 11th, 1899. The sessions each day will be from 10:30 A.M. until 1:30 P.M., and from 3 until 6 P.M.

American Medical Association. The Fiftieth Annual Session will be held in Columbus, O., on Tuesday, Wednesday, Thursday and Friday, June 6th, 7th, 8th and 9th, commencing on Tuesday, at 11 A.M.

Well-Directed Charity. Private donations amounting to 200,000 roubles (\$100,000) were made by a few individuals in Moscow, for the purpose of erecting a sanitarium for consumptives in that city.

The Medico-Chirurgical College Wins. The Medico-Chirurgical College (Philadelphia) petitioned Common Pleas Court No. 3 for leave to amend its charter so as to grant diplomas and degrees in dental surgery. This was resisted by the Philadelphia Dental College, on the ground of want of authority to do so. The Common Pleas Court decided in favor of the Medico-Chi., and the Dental College took an appeal from this decision. The Supreme Court, in an opinion by Justice Dean, has just confirmed the decision of the lower court, and dismissed the appeal.

Habitual Luxation of Both Patellae. Kocher reports that luxation occurs only in extension. As in most cases of congenital luxation of the patellae, the dislocation is outward and total. The operation, after Roux, consists in making an incision in the outer surface of fascia and capsular ligament, loosening the attachment of the patellar ligament and shifting it inward. A fold is made in the relaxed capsular ligament and secured with a suture. Roux also divides the vastus externus to lessen outward traction.

PRESCRIPTIONS BY NOTED THERAPEUTISTS.

ACNE AND FURUNCULOSIS.

℞ Syr. calcii lactophosph. f ʒ iij
 Ol. Morrhuæ, f ʒ iv
 Ol. amygd. amar., m. iii
 Pulv. acaciæ, 3 x
 Aquæ, f ʒ i
 Dose: One tablespoonful.—PURDON.

ACNE PUSTULES.

℞ Ichthylol,
 Bismuth, subnitr.,
 White precipitate, aa part i
 Vaseline, parts x
 M. S. Apply at night.—VON HEBRA
 and ULLMAN.

ALOPECIA.

℞ Extr. pilocarpi fl., f ʒ i
 Tinct. cantharidis, f ʒ iv
 Lin. saponis, q.s. ad f ʒ iv
 M. S. Rub into the scalp daily.—
 BARTHOLOW.

AMENORRHEA.

℞ Pulv. columbæ,
 Pulv. saffron, aa 1 gm.
 Ferri redacti, 50 cgm.
 Pulv. aloes, 30 cgm.
 M. ft. chart. No. X. S. One or two
 in honey or preserves after the even-
 ing meal.—DAUCHEZ.

AMYGDALITIS.

℞ Sod. benzoat., 3 i to 3 iv
 Glycerini,
 Elix. calisayæ, aa f ʒ i
 M. S. Teaspoonful every hour or
 two.—STEVENS.

AMYGDALITIS AND NON-DIPHThERITIC
ANGINAS.

℞ Salol, 2 gm.
 Ol. amygdalæ dulcis, 4 c.c.
 Syr. Simplicis, 30 "
 Aquæ destillat., 75 "
 M. S. To be taken in three doses
 during the day.—EPHEMERIS.

AMYGDALITIS LACUNA.

℞ Borax,
 Potas. bromid., aa 5 parts
 Ac. carbol., 1 part
 Glycerin, 50 parts
 Infus. altheæ, 450 parts
 M. S. Gargle.

ANALGESIC.

℞ Codein. sulph., gr. xxxii
 Spir. ammon. arom., f ʒ vi
 Whiskey, f ʒ i
 Syr. aurant. cort., f ʒ iv
 M. S. One to three teaspoonsful
 once or twice daily.—JONES.

ANESTHESIA, LOCAL.

℞ Chloroform, gtt. 150
 Ether sulph., gtt. 225
 Menthol, gr. 15
 M. S. Spray over surface. Effect
 lasts 2 to 6 minutes.—DOBISCH.

ANOREXIA.

℞ Tinct. cinchonæ,
 Tinct. colombæ,
 Tinct. gentian, aa 5 gm.
 Tinct. rhei, 3 "
 Tinct. nucis vom., 2 "
 M. S. Fifteen to twenty drops with
 each meal.—*Journal de Medecin de*
Paris.

ANTHELMINTIC.

℞ Acid. salicyl., 0.5
 Extr. filic. maris ether., 0.75
 Pulv. acaciæ, 7.5
 Syr. simplicis, 50.
 Ol. cinnamomi, gtt. 10
 Aq. destil., 100 c.c.
 M. S. Take before breakfast.—GUIDA.

ANTI-NEURALGIA PILL.

℞ Strychninae sulph., gr. i
 Quinin, sulph., 3 i
 Ferri redacti, gr. xv
 Extr. gentianæ, 3 ss
 M. ft. pil No. 60. S. One three times
 daily.—RUFF.

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[NO. 5

LECTURE.

HYPNOTISM, AND ITS USE IN MEDICINE.¹

BY F. X. DERCUM, M.D.,

Clinical Professor of Nervous Diseases, Jefferson Medical College.

THE patient of whom I speak is a woman, who has been treated by hypnotism both abroad and in this country, and who now seeks relief from a certain condition by the same means. I shall hypnotize her before you, not because I am an exponent of this practice, nor because I wish you to follow it when practicing, but because every intelligent physician should know of the process, its method, and its limitations.

The fact of hypnotism cannot be disputed. It is very easy to hypnotize certain animals—as birds, rabbits, etc.—by attracting their attention, by stroking, by drawing a chalk line in front of them, or by other means. They pass into the first stage of hypnotism or catalepsy. This stage is readily induced in the human being also. During this stage there is rigidity of the muscles. In the next stage, instead of rigidity of the muscles, there is relaxation, and the subject is made deeply asleep, the state being known as lethargy. In the third stage, the subject makes automatic movements at the command of the operator, and this condition is called somnambulism. Catalepsy does not assist us in medicine, lethargy but little, and somnambulism not at all.

The subjects capable of being hypnotized belong to the great class of neurotics, especially those of a hysterical tendency. In fact, many of the symptoms connected with hypnotism resemble those of hysteria.

The theories that explain hypnotism are mostly metaphysical, and of no satisfaction to the physician. To be practical for him they must have a physiologic or an anatomic basis. To explain the process, we must have a clear conception of the physiology of natural sleep, and this requires an understanding of the nervous system. The nervous system consists of

¹ Clinical Lecture delivered at the Jefferson College Hospital.

cells, not fibers and cells. What were formerly known as fibers are but processes of the cells, and probably neither the cells nor processes are fixed, but are capable of motion. Some years ago I suggested that the processes of the cells approach each other and are in contact when we are awake. When they become tired, they shrink, and the processes are no longer in contact and there is no longer consciousness. This hypothesis has since been demonstrated to be true, both as regards the cells in the brain and the spinal cord.² If these facts be applied to the question of hypnotism, the mystery disappears. This state is induced ordinarily in first or early trials by inducing fatigue. Thus by fixing the eye of the subject upon a bright object for a long time, the muscular apparatus of the eye becomes fatigued, and sooner or later the partial sleep of hypnosis is induced. This may be shown by divergence of the eyeballs, dilatation of the pupils, movements of swallowing, and at times deep breathing.

During this state suggestions are possible through the ear because this organ is still in close relation with the cortex. The person believes what the operator tells him because the suggestions are not contradicted or corrected by the evidence of the other senses, *i. e.*, what the patient sees or feels. If, for instance, a person in such a state be told that there is a garden of flowers about him, although he is in reality in a room, there is no way for him to know the truth, sight and touch are both shut off. The hypnotizer has access to the cortex, then, by way of the ear, and all the other senses are suspended, as far as the cortex is concerned, and do not interfere with or correct the suggestions made. This explains the increased suggestibility of hypnotism—how it is that suggestions are understood and obeyed by the subject, and how they can be made to perform acts out of all keeping with their surroundings.

After these preliminary remarks, let me say that if hypnotism is ever used by a physician it should be only for an obvious and definite purpose. One or more persons of the same sex as the patient should invariably be present. Accusations have been made where such precautions have not been taken. It may be possible that voluptuous sensations are experienced by certain subjects while in the hypnotic state, and these might be made the basis of accusations. Whether this be true or not, I cannot say; but the physician runs a risk of such consequences unless he is protected by witnesses. Again, the physician should be honest with his patient, and tell exactly what the process is, and that it is for the purpose of relieving the pain or whatever condition may be present.

This young woman came to me some few years ago complaining of a frightful pain in her left shoulder. A careful examination showed no organic disease in the joint, or of the nerves supplying it or adjacent structures. Treatment was unavailing. She stated that she had once

² Odier in Switzerland, Hodge in this country. Wiedersheim actually saw nerve cells move in the living animal, an entomostracan.

before been relieved of a similar affection by hypnotism, and asked that it be tried for the existing trouble. I did this, and the pain disappeared. She comes now complaining of rapid breathing and a choking sensation, which is very severe at times.

In inducing the hypnotic state, it is not necessary that a bright object be used to attract the attention of the patient; a finger merely upon which the person fixes his eye is often sufficient. Further, a profound degree of hypnotism is not requisite. If hypnotism is ever justifiable it is only in the degree which this patient now presents, which I have induced by asking her to concentrate her attention upon my finger as I hold it before her. This is only a light sleep, which I could deepen, if necessary, by stroking her face and eyes. After the patient is in this condition, three things are to be done. First, you are to say to the patient that the symptoms will disappear and never return. Additional weight to the suggestion may be given by grasping the patient's hand with the gesture of assurance and by repeating the suggestion several times, naming the special symptoms of which he complains and stating positively that he will not suffer from them again.

Having done this, shall I now awaken the patient? Not yet; for we owe certain duties to such patients, and must take certain precautions for their welfare. The suggestion must be made to the patient that no one can hypnotize him unless he is willing. This is a very essential point, and must not be omitted. It is one of the dangers of hypnotism that the patient becomes more and more susceptible to it. In some cases hypnotism may be brought on spontaneously or by the unintentional stare of a stranger. For this reason, it is necessary to say to the patient, while still asleep, that hypnotism will always depend on his deliberate desire, or willingness, to have the state produced.

We must remember, further, that this hypnotic state is essentially dependent on an induced fatigue, and that prolonging it increases this fatigue. If greatly prolonged, it will be found that even the processes of nutrition are changed, as evidenced, for instance, by a marked diminution in the amount of solids in the urine. Because of this fatigue, the patient will feel depressed and tired if brought out of the hypnotic state without anything having been done to counteract this effect. Finally, then, we must say to the patient that when he awakes he will feel perfectly well, far better, indeed, than he did before the treatment, and will not be in the least tired from the experience.

Having borne these three points in mind, we are now ready to awaken the patient. We could amuse ourselves with various somnambulistic effects if we chose to produce that condition, but we leave that to the public stage and the pretender. Such demonstrations have no therapeutic value, and are unprofessional; no physician should ever practice them.

Subjects can be awakened by various methods, *e. g.*, blowing on the face, slapping them lightly, or by saying to them that they will awake in a given length of time. I say to this person that she will awake in just two minutes; and she does in slightly less time.

We come now to the question as to the practical value to the physician of hypnotism. In my experience, the value is very little. One may occasionally cause the permanent disappearance of a symptom, but more often the symptom reappears. It must be remembered that where diseases are caused by a pathological lesion, hypnotism and suggestion are utterly without avail. Mere suggestion to the cortex can have no effect on an organic lesion. Again, if the symptom complained of disappears, it frequently happens that others arise to take its place. The patient whom I have just hypnotized is an illustration of this truth. Again, there is a certain pleasurable sensation in the sleep of hypnotism. It shuts out the outside world, with all its sickness and cares, and, in addition, suggestions are made that the patient feels happy and perfectly well. In short, hypnotism acts like a psychic stimulant, and patients are very apt to acquire "the hypnotic habit"; they come back to the clinic week after week for a repetition of the treatment.

My belief is, that the physician should not practice hypnotism unless under very exceptional circumstances. Hypnotism is something that the public do not understand, and it is better not to attract attention or comment by the use of this method of treatment. If it is employed, the greatest precautions must be taken in regard to witnesses and the other points I have enumerated. In therapeutics, then, hypnotism plays a very subordinate part, except in rare cases. As regards the anesthesia, which may be induced in hypnotism, minor operations have been done under its influence. One surgeon here performed an operation on the inguinal glands in the hypnotic state, and the patient knew nothing of the operation until afterward. A regular anesthetic could not be administered in that case for some reason or other. However, in the majority of cases, the anesthesia is not deep enough for surgical operations to be done. I am liberal enough, although opposed to its use, to say that it may have a legitimate field in cases where anesthetics cannot be given at all. For medical purposes, its use is very limited.

I should add that very much can be accomplished by suggestion in certain patients without hypnotism. Thus, giving an inert powder, such as starch, with the statement that it will produce sleep, or a few drops of distilled water with the statement that the medicine is very powerful, and will relieve pain, or making the strong and repeated assurance that the symptoms complained of will definitely disappear. Such expedients as these are of great value in hysterical patients, the very class also most readily brought under the influence of hypnotism.

ORIGINAL PAPERS.

*THE TREATMENT OF THE CHRONIC DISEASES OF THE
KIDNEYS.¹*

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GENTLEMEN: I desire to bring forward for discussion a few questions which relate to the chronic renal diseases, and especially the dietetic treatment of chronic contracted kidneys. Since in the year 1890 the Congress last occupied itself with this theme under the lead of Senator and Ziemssen, no essentially new points of view have been suggested. There has grown up in the meantime in practice a certain plan, according to which the regulations concerning diet are accustomed to be made. This, roughly outlined, is as follows: A moderately rich allowance of albuminous food, giving the preference to the vegetable albumens and to the albuminous constituents of milk; a liberal supply of fresh and cooked fruits, and simple and unirritating preparations of vegetables and farinaceous foods in the greatest variety possible.

The entire amount of the fats and carbo-hydrates should depend upon the existing state of the patient's nutrition. In many cases they must be severely restricted, in others liberally allowed. Among the beverages must be mentioned prominently, as especially valuable, milk with its derivatives, sour milk, buttermilk, cream, and sometimes also kefir and kumiss. Many go so far as to insist that the ingestion of one to two liters of milk daily is necessary. One meets less frequently in the therapeutic directions of prominent authors than in practice with long continued, systematic milk cures, requiring three to four liters of milk daily, and with us, indeed, not to an equal extent or frequency as is the case in France.

Alcoholic drinks, as well as tea and coffee, are to be either entirely forbidden or permitted only in small amounts or weak dilutions. Along with these directions come, as a rule, the prescription of some of the weak carbonated alkaline waters in the quantities of one to two cups each day. One has the choice of many springs for this purpose, and which one is selected depends unfortunately more upon the intensity of the pressure with which this or that spring is urged upon public attention than upon any other considerations. Frequently, one might say year by year more frequently, these prescriptions are expanded into regular drink cures at favorite health resorts.

¹ A discourse delivered at the Congress for Internal Medicine, Carlsbad, April, 1899; furnished by the author for publication in the INTERNATIONAL MEDICAL MAGAZINE.

Before I take up the point in this scheme which shall occupy us especially, I would like to interpolate one critical remark concerning the manner in which in practice the regulation of the allowance of albumen is carried out. In accordance with a correct knowledge of the subject, and in full agreement with the leading hand-books and treatises, as well as with the clinical and experimental researches of the last decade, there is in practice relative to chronic contracted kidneys by no means so much stress laid upon the absolute restriction of albuminous food as in the case of acute nephritis and of the severe forms of parenchymatous nephritis. If one estimates that which is permitted in the form of milk, eggs, meats and vegetables, the amount of albumen will be found to be above rather than under 100 grams daily, and in no sense to be considered as small. Much more importance is attached by many to the selection of the kinds of flesh foods, and it has become indeed usual for patients with contracted kidneys to be allowed only the white parts of fish, fowl and calves, while the white meat of swine is regarded with distrust. Red or brown meat, whether of slaughtered animals, or of game, or poultry, is strongly condemned by many physicians. I expressly insist that this rule, in so far as it regards the contracted kidney, has grown up gradually in practice, as a result of frequent repetition, without having been recommended in the writings of prominent authors. This custom has in practice many times developed into an abuse which, in not a few cases, has had injurious results. For many patients who scrupulously comply with this rule acquire in time such a distaste for white meat that their consumption of meat in general becomes restricted to the smallest amount; the proportion of albumen taken sinks more and more, and, because in consequence the appetite in general and the entire consumption of food is lessened, there results a disturbance of nutrition and loss of strength. What particular significance attaches to the prohibition of dark meat is shown by the fact that in such cases, with a return to a varied mixed meat diet, the appetite comes up and the lowered strength is increased.

In the last year and a quarter seven observations of this kind have been made by me. These are from a practical standpoint. But from a scientific point of view I might add the remark that the distinction between the white and dark meats for the nutrition of renal patients has been anything but exactly established, and, at the least, has been greatly exaggerated. I have not found in all literature a single exact clinico-experimental confirmation of it, though there is no lack of hypothetical assertions concerning the greater content in dark meats of substances that are irritating to the kidneys, especially the nitrogen-containing extractives. As regards these last I might, on the other hand, bring forward the fact that our text-books on physiologic chemistry state that the highest creatin values are in the white meat of chickens and rabbits; they exceed in these three or four per thousand, while in the case of beeves, for example, the same values never

reach three per thousand. The essential difference between white and dark meats is in their content of coloring matters, the chemical constitution of which is not yet known with entire exactness, but we have no ground whatever for classing them among the injurious substances.

To the assertion that there is a special harmfulness in dark meats for renal and also for gouty patients, unsupported by clinical or experimental evidence and handed down from one treatise to another, I am able to oppose at least one observation showing that a patient with chronic parenchymatous nephritis, in one five-day period, under the daily use of one-half pound of chicken, excreted exactly the same amount of nitrogen, and even a little more albumin, than in a following five-day period in which, instead of chicken, she received an amount of beef having the same content of nitrogen.

The second far more important question which I would here discuss concerns the allowance of liquids. How shall we regulate this in patients with contracted kidneys?

Eleven years ago H. von Bamberger reported, in a short clinical paper, that in the treatment of certain special cases of disease he had come upon the question whether it were better for patients with chronic Bright's disease to drink much or little. Since there were no observations at hand on this subject, he himself, in the cases of two patients with chronic parenchymatous nephritis, made comparative investigations, in one strongly increasing the customary amount of fluid, and in the other greatly diminishing it. The augmentation of the fluids produced an increase of the diuresis, but left the excretion of urea and albumin practically unchanged. The diminution of the fluids left the general condition undisturbed, but had as a result a lessening of the urea excretion, and, indeed, a small increase of the albuminuria. From this one observation, which speaks against the lessening of the fluids, von Bamberger draws the conclusion that in no form of Bright's disease, not even in the contracted kidney, is there ever an indication for a restriction of liquids; at the best he infers that a severe diarrhea might result.

This view representing von Bamberger is accepted, in part upon his express authority, in nearly all the newer works upon the treatment of chronic kidney diseases. Regarding the contracted kidney, they either say nothing as to the amount of liquids to be allowed, or recommend liberal portions of them for the better flushing of the kidneys. Contrary expressions are met with, but very exceptionally. For example, W. Camerer describes one chronic renal case with edema in which, by a decided restriction of the allowance of fluids, the edema quickly disappeared with a simultaneous increase of diuresis and of the elimination of urea. This was also a case of parenchymatous nephritis, and this observation teaches that from the unfavorable experience of Bamberger one should not generalize. As regards the contracted kidney, I pointed out a year ago, in a discussion of the indications which are afforded by the combination of contracted kidney and

diabetes, that these diabetics find themselves in the long run better off when they are permitted but little liquid. I showed that, by the restriction of fluid, we spare the heart and thereby guard against the most important danger which threatens renal patients, and especially the diabetic with kidney disease, to wit, paralysis of the heart.

In the recently published *Hand-Book of Nutritional Therapy* (*Ernährungstherapie*) Herr von Ziemssen also assumes the same position, as I read with satisfaction. He requires in patients with contracted kidneys a limitation of fluids, especially in those cases in which there are present at the same time distinct signs of arterio-sclerosis.

I have now for some six years been devoting careful study to the question how persons with contracted kidneys fare with a large, and again with a moderate, allowance of fluids, and have to declare, as a result of my observations, that very often patients with contracted kidneys can be extraordinarily helped by a restriction of their consumption of liquids. I will give here a brief resumé only of these observations, the report of the details and of the individual cases being withheld for publication later.

The most favorable, and likewise most striking, effect of the restriction of liquids is seen in the advanced stages of contracted kidneys, in which attacks of cardiac asthma have already appeared and the objective examination reveals, besides hypertrophy of the left ventricle, a considerable dilatation. Digitalis is a sovereign remedy in these conditions, and in fact, it often succeeds in restoring an endurable state until new exacerbations develop.

At ever shortening intervals we have recourse to digitalis and similar medicines, till finally the patients sink into a lasting, severe agonizing condition in the clinical picture of which now the phenomena of chronic heart weakness and again those of chronic uremia predominate.

It is seldom that, after an outbreak of the first threatening appearances of heart failure, the patients survive longer than a few months.

In this stage of the chronic contracted kidney which is ripe for the digitalis treatment with cardiac asthmatic oppression already present, partly in consequence of the preceding attacks of stenocardia and of edema of the lungs, partly from the distinctly recognizable and very considerable dilatation of the heart, the restriction of fluids, even without any other treatment, showed itself decidedly important and conspicuously useful. When, by a conscientious following of the directions, a good result is possible of attainment—and this has hitherto occurred in more than thirty cases—the good effects have shown themselves in a prompt lessening of the at once tormenting and alarming cardiac embarrassment, restoration of good sleep, a profuse diuresis proportional to the amount of fluid taken—similar to that which Oertel in his day related of the thirst cure in heart cases—and above all an indubitable recession of the dilated hearts. The relatively favorable condition to which the patients return after their former threatening experiences

may continue in many of them for a number of months, or even for a year. Naturally, the result was not so favorable with all the patients who were treated by means of a restriction of fluids, for many came under treatment so miserable, and with so many disturbances, that no kind of therapy could be of any real use. But even in these desperate cases I had for the most part the impression that the limitation of liquids produced at least a temporary betterment. Not all of those even who were apparently improved, and for a long time afterward continued better, are still living. The nature of the disease explains this sufficiently. But a sometimes shorter, sometimes longer, period of euphoria and perhaps also a prolongation of life was nevertheless achieved.

Out of the great number of observations I take one, sketching it briefly in order to show the therapeutic results of a restriction of fluids.

One of the earliest observations concerns a gentleman now forty-five years old, who consulted me three and a half years ago. He knew then that he had already had diseased kidneys for at least five years. Until the last months, however, no serious difficulties had appeared. But in the last months he had suffered in increasing measure from difficulty of breathing and a painful pressure feeling in the heart. In the last weeks he awoke every few nights with a strong feeling of oppression and was obliged to remain for hours at a time out of bed. Twice these attacks were accompanied by a frothy, bloody expectoration. The examination revealed, among other things, considerable dilatation of the left heart—even to a point beyond the anterior axillary line—and, as I desire particularly to emphasize, the presence also of retinitis albuminurica. His customary allowance, as ordered by his physician, amounted to between $3\frac{1}{2}$ and 4 liters. Included in this was $1\frac{1}{2}$ liters of milk and $1\frac{1}{4}$ liters of a mineral water. Incidentally, it may be added that this consisted of Fachinger and Neuenahr water in alternation. My only important prescription in this case consisted in the limitation of the fluids to, at the outside, $1\frac{1}{4}$ liters daily, and it was left to the patient to choose, within these limits, milk, water, soups or fruit juices, or even occasionally to indulge in a small glass of light wine or beer. The result was that, within a few days, the cardiac dyspnea abated, and up to this time the patient, who, with the fullest activity, oversees a large industrial establishment and still follows conscientiously the directions given at that time, has been free from any steno-cardiac embarrassment. As a curious experience, I have to relate that this patient, having fallen ill with a slight digestive disturbance while away on a journey, received from the physician, who then attended him, the assurance that he would die within a short time unless he returned as soon as possible to a milk diet. I saw the patient last about half a year ago, and found the cardiac apex some two finger-breadths further inward than three years before, and could no longer discover the retinitis which I have previously mentioned. The albuminurica naturally continued in the same old way.

If in the dangerous stages of chronic contracted kidney, that is, when the heart is threatened with paralysis, the restriction of fluids proves itself useful, then there is offered us a reason for employing, even earlier, when the patients are free from embarrassment, the same procedure in a prophylactic way and thereby at least warding off one of the dangers which prepare the way for a fatal result of the disease. In these earlier stages the effects of the restriction are naturally not so striking. The best that can be accomplished then is the preservation of the *status quo*. However, as a result of my numerous observations, I have the impression that even at this time, by means of a restriction of fluids, a positive help can be afforded. Many have attained to a markedly greater capacity for work under a treatment suited to valvular heart disease, consisting of a limitation of fluids, exact quantitative measurement of the foods, systematic physical exercises, and a resort during the summer to the Nauheim or Kissingen baths.

I scarcely need to mention especially that in the earlier stages of the contracted kidney, that is, so long as the kidney disease is well compensated by cardiac hypertrophy, large amounts of liquids, whether taken in the usual daily routine or at spas, produce no immediate apparent harm. This is exactly as it is in the case of heart disease. The prohibition of flooding the system with fluids is at this time of importance only as an assurance against the future. Yet I have had direct proof in a few cases that large unaccustomed amounts of fluids worked immediate injury to patients with contracted kidneys, who, up to that time, had seemed to rejoice in unimpaired cardiac power. One of these was the result of a milk cure of several weeks' duration, the other of an exaggerated and unsuitable mineral water cure in Neuenahr. In both cases the flooding with liquids produced dilatation of the heart and cardiac weakness, of which there had been no signs before.

The former observation concerned a gentleman forty-six years old, in whom the diagnosis of contracted kidneys had been established the previous summer, although no special diet had at that time been prescribed. In the beginning of November there occurred a light and transient apoplectic form attack. In this connection it had been decided in a prominent quarter that there existed no sign whatever of cardiac weakness, and above all no objectively recognizable cardiac dilatation. A diet was ordered for him in which milk and mineral water played a large role, and which comprised in this form alone at least $3\frac{1}{2}$ liters of fluids. When I saw the patient for the first time, three weeks later, a decided dilatation of the left ventricle had developed, the apex beat of the heart was outside the anterior axillary line, and there was a by no means light dyspnea. The patient continued in all respects under the same external conditions. The only essential change in the treatment consisted now in a lessening of the fluids to about $1\frac{1}{4}$ liters daily. The result was, that after fourteen days only, the apex beat lay

again within the anterior axillary line, and, after fourteen days further, it extended beyond the mammary line one cm. only. Simultaneously, there was a distinct elevation of the cardiac power and of the physical capacity for work.

The second observation concerns a gentleman aged fifty, who had been sent from his home, in England, with a trustworthy diagnosis of contracted kidneys, for the baths and water at Nauheim. From the history, and the accompanying detailed account of his physician, it appeared that the patient, at the time of his departure from home, had had no indications of heart weakness, and likewise no noticeable degree of cardiac dilatation. In Nauheim the somewhat corpulent gentleman led a very quiet, monotonous life, drank much milk and very much spring water—how much may be inferred from the fact that the occasional measurement of the amount of urine showed that it reached nearly to 4 liters daily. His urine had indeed been frequently examined, and it had been determined, with much satisfaction, that the percentage of albumin had been lessened, naturally, since the urine had been largely diluted; but no special attention had yet been given to the heart. When, after the treatment in Nauheim, he consulted me, I made out a marked dilatation of both ventricles, which accorded with a rapid and irregular pulse and dyspneic embarrassment upon the slightest exertion. This dilatation of the heart, which had manifestly developed within a few weeks, receded within fourteen days by degrees, which were almost perceptible from day to day, as the inundation of liquids had been replaced by a strong restriction of the same. I think that these patients with contracted kidneys, when one wishes to send them to health resorts, will obtain much greater advantage from the carbonated baths at Nauheim, Kissingen, etc., and from the other heart-regulating measures there, than when one invokes the very dubious help of the alkaline drinking waters. That these indeed in certain circumstances prove injurious, is shown by the above narrated case.

I must not end this part of my work without pointing out that the restriction of liquids to about $1\frac{1}{4}$ to $1\frac{1}{2}$ liters in the case of patients with contracted kidneys often involves great difficulties in practice, and technically is much more difficult to carry out than in the cases of cardiac patients, and those suffering from obesity. The feeling of thirst in the former patients has to be contended with much more frequently than with the latter, and there is much greater difficulty with the relatively small amount of fluid to assure the ingestion of a sufficient amount of nourishment. These difficulties are naturally much more readily overcome in sanitariums than in private practice. After overcoming the first obstacles, however, the further progress with restriction of the liquids gives no further special trouble, and although, in all therapeutic questions, experience and observation at the sick bed are of the first importance, I have nevertheless believed it my duty to add a few clinical and experimental investigations. They con-

cern, above all, the determination as to how far the elimination of the products of tissue metamorphosis in the contracted kidney is independent of the ingestion of water. If perchance it should be found that urea, uric acid, the urinary bases and urinary salts are less freely and less perfectly excreted upon a scanty allowance of water than after a flooding of the system with water, then that should serve as a warning, since we do not dare to favor the accumulation of these products in the body generally. In fact, the custom of prescribing for such patients milk and water, and sending them to regular drink cures and renowned springs, has resulted from the notion that a large use of water favors the elimination of the products of tissue changes in every form of nephritis. Up to this time I have made series of examinations in the cases of more than twelve patients, some of which cover a long period of time. The beginnings of these clinical and experimental observations date from a long while ago, and were connected with the investigations over the tissue changes in renal patients which nine years ago were published by myself and our Carlsbad colleague, Ritter. Later these were continued partly by myself, partly by my pupil, Dr. Dapper, of Kissingen, and Herr von Rzetkowsky, of Warsaw, or by my assistants. They shall be published in full later, when a few pertinent special questions have been answered. I have here to communicate, as the entirely justified conclusion, that in the case of patients with contracted kidneys, neither in the stage of relative euphoria, nor in the stage of beginning cardiac weakness, nor indeed in chronic uremic phenomena, is the elimination of the most important products of tissue metamorphosis ever impaired through a lessening of the liquids to about $1\frac{1}{2}$ liters daily. Not in a single observation was this the case, though in a few instances there was the contrary result, that is, the elimination of nitrogen and urinary salts increased, along with the lessening of the fluids. As concerns the excretion of albumin, the absolute daily amount was not essentially influenced through augmenting or diminishing the allowance of fluids. The percentage of albumin increased only when, with a smaller ingestion of fluids, the amount of the urine fell off. Since in practice the proportion of albumin is exclusively and erroneously considered, it is important to know this fact; otherwise one might be led through a lessening of the liquids to the wrong opinion that the albuminuria had been greatly increased.

Both my clinico-experimental investigations and clinico-therapeutic observations, moreover, extended, not only to contracted kidneys, but also in a larger measure to the chronic parenchymatous nephritis, and indeed to acute nephritis. I must now insist that in both these forms of nephritis it is under certain circumstances of great advantage to the patients to depart from the usual plan of drinking water freely. But I will not enter into this subject further, since these investigations are not yet concluded, and I cannot yet furnish with sharp precision the indications respectively for a generous and for a sparing allowance of water.

GALL-STONES.

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College of Philadelphia.

GALL-STONES are calculi formed, as a rule, in the gall-bladder, but sometimes in the biliary ducts. Their recognition seems to have taken place very early, and it is stated that Hippocrates, Galenus and Aretaeus were all familiar with them, though from reference to their works I have not been able to verify the statement. According to Semmola and Giofredi, who wrote the paper upon "Diseases of the Liver" for the *Twentieth Century Practice of Medicine*, gall-stones were first observed by Keulmann in 1655. Their relation to the symptoms their presence occasions was not worked out until a half century later.

Etiology.—The occurrence of gall-stones seems to be dependent upon many factors, no single one of which can be regarded as self-sufficient.

Age.—Gall-stones occur most frequently in middle life. Kraus (*Beitrage zur Pathologie und Therapie der Gallensteinkrankheit*, Berlin, 1891) collected over 2,000 cases, in only five of which were the patients below twenty years of age. Of these five, four were females and one a male.

The following table taken from Kraus will show the frequency of cholelithiasis in both men and women at various ages. It cannot, however, be accepted as an accurate index of cases in general, as Kraus observed cases visiting Carlsbad in search of health and hence commanded only those cases in which the presence of calculi had given rise to symptoms, and whose financial condition enabled them to visit a health resort.

Years.....	20-30	30-40	40-50	50-60	60-70	70 +	Totals.
Men.....	15	110	321	231	52	6	735
Women....	98	444	565	303	87	17	1,514
Grand total.....							2,249

Gall-stones have rarely been found in the gall-bladders of new-born infants, and in young children. They are also sometimes found in the very aged. Charcot found them present in one-third of all the old women whose bodies were examined at the Salpetriere.

They probably exist in an immense number of cases in whom no symptoms ever direct attention to them. The statistics of Kraus, therefore, are rather more useful as indicative of the time when they are apt to call attention to themselves, rather than the time when they really exist. As the result of pathologic observation, it might safely be stated that the frequency of gall-stones increases with each year of life. As illustrating this fact, the statistics of Schroeder may be more useful than those of Kraus.

Age	Necropsies	Gall-stones	Percentage of cases
0-20	82	2	2.4
21-30	188	6	3.2
31-40	209	24	11.5
41-50	252	28	11.1
51-60	161	16	9.9
61+	258	65	25.2

Of the above 4.4 per cent. were men and 20.6 per cent. women.

Of 1,000 cases collected by Harley, 10 occurred before the twentieth year, 40 between the twentieth and thirtieth years, 200 between the thirtieth and fortieth years, and 750 in cases over forty years of age.

Sex.—Cholelithiasis is far more frequent in women than in men. This is amply shown by reference to both of the statistical tables given above. In the table of Kraus there are two women to one man, while Schroeder's autopsies show five women to one man.

Of 4,300 necropsies performed at the Stadt-Krankenhaus in Dresden, between 1853 and 1869, gall-stones were observed 270 times, or in 7 per cent. of all cases. Of these cases the relative percentage of males to females was 4:9.6.

Bollinger found gall-stones in 25 per cent. of all women over sixty years of age, and Charcot in 33.3 per cent. of the old women of the Salpetriere.

Of 620 cases collected by Stein 337 (61 per cent.) were in women and 243 (39 per cent.) in men.

As predisposing causes to biliary lithiasis in women, may be mentioned:

1. *Pregnancy.*—Frequent pregnancy seems to favor the formation of gall-stones.

2. *Unhygienic Clothing.*—The corset seems to play an important role by producing prolapse of the liver and altering its shape so that the bile cannot escape readily. Bollinger found "corset liver" in 40 per cent. of women with gall-stones.

3. *Habit.*—Most women of the better classes lead sedentary lives without sufficient exercise to aid in the combustion and elimination of waste products. As cholesterin is one of these, such habits are supposed to predispose to its accumulation in the body.

Heredity.—Family predisposition to cholelithiasis certainly occurs. As, however, together with what might be regarded as predisposition there goes, in many cases, a general tendency to luxurious living, heavy diet, sedentary habits, professional occupation, and other causes, themselves factors of no mean importance, one must be somewhat cautious as to the exact importance to be attached to the family predisposition by itself.

In general, it may be said that the "arthritic diathesis" or lithemia is the inherited body habit most frequently associated with gall-stones.

Occupation.—Kraus observed that fifty per cent. of the cases in which

men were afflicted with gall-stones came from professional and clerical men. Remembering that gall-stones are most frequent among women, and men of the professional class, it seems proper to conclude that the occupations most predisposing to their formation will be those associated with sedentary, inactive life, intense nervous application, full diet and excessive nutrition. Biliary calculi are much more frequent among the rich than among the poorer classes seen in hospital service.

Diet.—Inasmuch as gall-stones are more frequent in the lithemic habit than among other persons, and occur more frequently among the rich than among the poor, it is commonly supposed that the conditions of hypernutrition and accumulation of waste products are predisposing to gall-stones. It is rather generally admitted that the increased frequency of gall-stones toward southern and tropical climates depends, in large measure, upon the diminished proportion of fatty animal matter consumed.

It is also noted clinically that the patients who suffer from gall-stones have a particular fondness for fat-producing foods, such as starchy, saccharin and fatty articles.

Many writers cling tenaciously to the theory that fats are necessarily associated with cholesterin formation, though Thadichum and others have shown that cholesterin is an alcohol and has nothing to do with it; and still other writers find it derived solely from the epithelial cells of the gall-bladder.

Frerichs regards irregularity in the taking of meals as an important factor, because of the increased length of time the bile is retained in the gall-bladder.

Constipation.—Constipation is frequently associated with cholelithiasis, but whether as an etiological factor or not, it is difficult to say. Absence of bile from the intestine favors constipation, and in gall-stones the irregularity of bile supply occasioned by intermittent obstruction may act by lessening the peristaltic action. On the other hand, in constipation the absorption of decomposition products from the intestine by the blood circulating in its capillaries may throw a considerable quantity of effete matter into the liver, the elimination of which is attended with an alteration of the bile which predisposes to the formation of calculus.

Nervous Diseases.—In the Colney Hatch Asylum for the Insane it is said that gall-stones are found in 36 per cent. of all cases. Cholesterin is more abundant in nervous tissue than anywhere in the body, and may be liberated where it is diseased and destroyed.

Miscellaneous.—Violent emotions, waste of nervous energy, chronic diseases, typhoid fever, and obstructions of the gall-ducts by inflammatory or neoplastic developments predispose to gall-stones. Cholecystitis and carcinoma are marked predisposing causes. Indeed, carcinoma of the gall-bladder and ducts is almost invariably associated with calculus.

Climatology of Gall-Stones.—There seems to be little doubt but

that climatic or geographical influences affect gall-stones, though exactly in what manner they operate is difficult to determine. German statistics show the calculi to be more frequent in and about Hanover than elsewhere in the Empire. According to Eichhorst, gall-stones are also exceptionally frequent in the neighborhood of Göttingen. It is said that they abound in Sweden and Hungary and are rare in Holland and Finland. According to Hurley, gall-stones are very frequent and of large size in Russia, probably because of the fatty diet consumed there. In general, it seems to be true that cholelithiasis is much more frequent in northern latitudes than toward the tropics, and in countries where abscess of the liver is a frequent disease, gall-stones are nearly unknown.

All attempts to refer the formation of gall-stones to peculiarities of the diet, or of the water of the regions in which they are common, have thus far yielded no satisfactory results.

Frequency of Occurrence.—That gall-stones are of more frequent occurrence than one would suppose from clinical evidence, is shown by reference to the statistics of some of the large hospitals where the subject has been investigated. In the Dresdener Stadt-Krankenhaus, as has already been mentioned, of 4,300 necropsies, gall-stones were found 270 times, or in 7 per cent. of all the cases.

Bollinger states that they occur in 7 per cent. of all cadavers. In 2,028 necropsies Roth found gall-stones 166 times, or 8 per cent. In 4,300 necropsies of Fiedler's collecting, gall-stones were present in 270, or in 7 per cent. Paulsen found that in Denmark gall-stones seemed to be present in only about 3.78 per cent. of all dead bodies examined. Of 2,520 necropsies at the Pathological Institute of Basle, there were 255 cases of cholelithiasis—almost 10 per cent.

MORPHOLOGY AND GENERAL CHARACTERISTICS.

Number.—Gall-stones may be single or multiple in their occurrence and will vary in appearance according to their size and number. It is probably more common to observe several than a single calculus. There are often large numbers, and the extent to which their numbers may increase is at times most extraordinary. Morgogin has recorded a case in whose gall-bladder there were 3,000 calculi, Naunyn one with 5,000, and Otto counted 7,802 in a case, specimens from which are now in the museum of Breslau. Chopart saw a liver in which the intra-hepatic bile ducts were so filled with biliary calculi that the organ was with difficulty incised.

Size.—The size varies with the number. Sometimes instead of forming distinct calculi the salts precipitate in the form of fine powder—"bile sand" or "biliary gravel." When there are many stones they are all apt to be small. When few, the stones may be quite large; when single they are largest. Enormous stones are sometimes seen, probably the largest single

stone on record being one found by Merkel, and described by Von Schüppel, which is said to have measured¹ 6x2.5 inches. Very heavy stones are recorded by v. Frerichs, who found one weighing 120 grams, and by Ritter, who secured one of 135 grams weight.

Shape.—The large single stones usually correspond in shape to the interior of the gall-bladder, and form oval or elliptical masses. Several large stones may conjointly form a mass exactly conforming to the interior of the gall-bladder. An excellent illustration of this is shown in the series of enormous stones seen in the illustration accompanying this paper. These stones

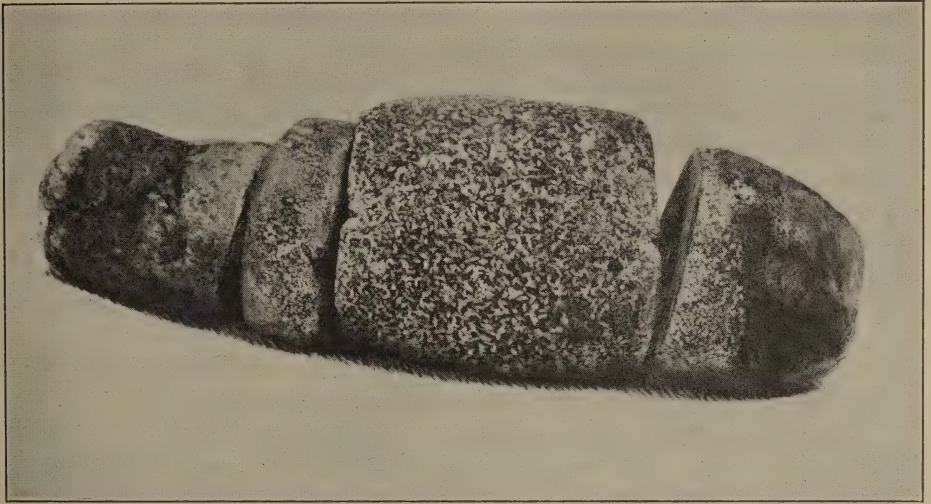


FIG. 1. LARGE CALCULI, CHIEFLY CHOLESTERIN, WITH SOME ADMIXTURE OF BILE SALTS (NATURAL SIZE).

were removed from the gall-bladder of an old woman, by Coroner's Physician Mattern. So far as can be determined, their existence was never suspected during life, no symptoms ever having resulted from their presence.

The surfaces of gall-stones may be smooth and polished, may be rough and irregular, or may be nodular like the surface of a mulberry. When there are several large stones, their approximated surfaces are usually flattened so that they present "facets." These may look very much like articulations, and are often polished as if by friction. It is quite possible that in the movements of the body, when the gall-bladder is disturbed, these faceted surfaces glide over one another, but that the facets result from such friction is highly improbable. The number of facets will vary with the number of stones, and the shape of the stone with the number of faceted surfaces which it presents to neighboring stones, so that it is common to find quadrangular, triangular and polygonal surfaces upon

¹ Length, 15 cm.; circumference, 12 cm.

stones with cubical or most polyhedral shape. When there are many very small stones, the facetting may or may not be marked. Single small stones are usually spherical or ovoid. The occurrence of a single stone with facets upon its surface usually indicates that others have been present but have escaped into the intestine.

Calculi formed within the biliary ducts may be cylindrical. Occasionally the intra-hepatic stones may be branched in conformity with the tubes in which they are found, rarely they are hollow cylinders with a central lumen.

Color.—The color will vary with the composition of the stone. As a rule, they are yellowish or brownish. They may be gray or white, or almost black. Rarely blue gall-stones have been observed.

Consistence.—Like the color, the consistence of the stone will depend in large measure upon its chemical composition. Some of the stones are soft and almost pulpy when fresh, and easily crushed between the fingers. Others are firm and crumbling when pressed. The crystalline stones are usually friable.

Specific Gravity.—The specific gravity of gall-stones is always heavier than water when fresh. When old and dry they often float upon the surface of water, probably because of air contained in their interstices. Bley found the specific gravity of a calculus which he investigated to be 1,580; Batillat that of another which he studied 1,966, so that there are considerable variations probably dependent upon the chemical composition of the calculus.

Structure.—When sections of gall-stones are made, it is usual to find that they have formed about one or more nuclei. Various entities, such as fragments of parasites, blood-clots, zooglea masses of bacteria may be found. Remarkable foreign bodies entering the gall-bladder sometimes form the foundation of a calculus; thus Bouisson found a needle in one; Förster a plum-stone; v. Frerichs a plum-stone that had entered the gall-bladder through a fistulous communication with the stomach; and v. Frerichs also observed metallic quicksilver in a stone that he examined.

Usually, each stone has a single nucleus, but there may be two or more, five having been counted in one large stone. The stones form about the nuclei by a process of lamination, the appearances of the large stones with multiple nuclei indicating that they originate from several smaller stones.

The lamina making up the calculus may be regularly deposited and of similar nature, but it is rather more usual for them to vary, at one time consisting of entirely different chemical substances from those seen before. The lamina are not of uniform thickness and are not regularly deposited, so that it is usual for the nucleus to occupy an excentric position within the calculus. Some stones, as those which consist of pure cholesterin, are not laminated, but are made up of crystals which show a beautiful radiated structure.

Because of the difference in organization and formation, some writers—Semmola and Giofredi—divide them into the *homogeneous*, which are of similar structure throughout, and the *mixed*, which are laminated, forming about some nucleus. The commonest gall-stones are mixed, the more rare stones homogeneous.

It is customary to divide the structure into nucleus, body and rind. When several calculi are simultaneously present in the gall-bladder, they are of the same composition. In rare cases, in which the stones may be found at periods remote from one another, their chemistry may be dissimilar. Stones occasionally have an eroded or cavernous surface, which has suggested to many that they may be in process of solution. Ex-

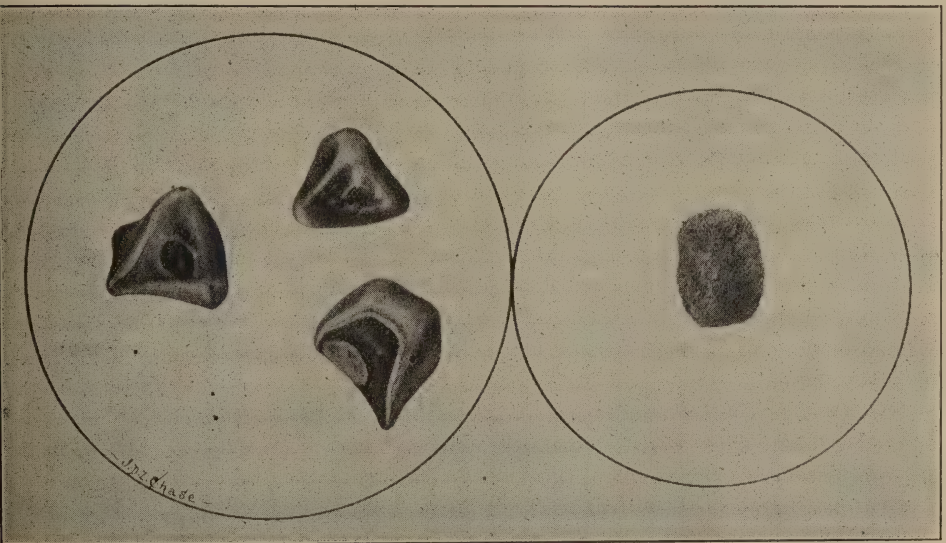


FIG. 2. COMMON GALL-STONES, SHOWING FACETS. FIG. 3. PURE BILE PIGMENT CALCULUS.

actly what the appearance may depend upon is not known. Schüppel believes that it is due to the activity of bacteria. Bartholow believes that calculi disintegrate in the gall-bladder at times, because of the movements of the body, which crumble their surface and edges, and because of the solvent action of the alkaline bile upon cholesterin.

VARIETIES AND COMPOSITION.

1. *The Common Gall-stone—Cholesterin-Bilirubinate of Calcium Calculus.* This is the most frequent calculus. It is usually about the size of a pea, but may be as large as a cherry. It is rounded when single or faceted when in numbers. Its color is usually yellowish, brownish, greenish, or even so dark as to be brownish-black. The surface is usually, if not invariably, smooth. The structure is laminated, the lamina being of different colors as a rule. Their consistence is usually rather soft, and may be

quite plastic. Sometimes they easily crumble between the fingers. They shrink in drying and very often present superficial cracks from contraction of the outer layer. Bartholow (Copper's System of Medicine, II., 1,059) speaks of these calculi as inspissated bile.

According to the analysis of Ritter, these stones consist of 70.6 per cent. of cholesterin, 22.9 per cent. of organic, and 6.5 per cent. of inorganic constituents. A complete analysis of gall-stones, made by Ritter, is as follows:

Cholesterin	0.4
Bilirubin and bilifucin.....	0.6
Biliprasin	0.8
Biliumin	12.8
Biliary substance soluble in water.....	2.3
Carbonate of lime	64.6
Phosphate of lime	12.3
Ammonia-magnesian phosphate	3.4
Mucus and loss	2.8
<hr/>	
100.0	

In addition to these ingredients found by Ritter, other chemical studies have demonstrated the presence of biliary acids, fatty acids, manganate of lime, calcium sulphate, carbonate of magnesium, sodium chlorid, traces of iron, copper, manganese and uric acid. Epithelium is often a component of the calculi.

2. *The Cholesterin Calculus.* This is of rather frequent occurrence, and of somewhat variable composition, so that it is well to speak of laminated cholesterin calculi and *pure cholesterin calculi*.

The stones are usually found within the gall-bladder.

(a) *Laminated cholesterin calculi* are usually of a rather translucent appearance when fresh and moist, and have a whitish, yellowish, greenish, brownish, or even blackish color, according to the degree of admixture of cholesterin and bile-pigments present. The stones may be multiple and faceted. The surfaces are usually smooth. They are friable in consistence. When cut or broken, it is usually found that a beautiful radiating crystalline centre is surrounded by a rind-like layer of non-crystalline salts in one or several layers. A central pigmented nucleus is sometimes present. Admixture with unusual salts sometimes makes the stones unusual in appearance, so that, as in the case of a combination with considerable carbonate of calcium, they may be chalky.

The percentage of cholesterin in these stones is usually over 90 per cent.

(b) *Pure cholesterin calculi*, containing as high as 98 per cent. of cholesterin, are rare. They usually occupy the gall-bladder and form ovoid or egg-shaped stones as large as a pigeon's egg. They are usually single, though occasionally two or three occur at the same time. When

fresh and moist, they may appear transparent. The color is usually creamy, pale yellow or amber. The surface is rough, as a rule. The roughness of the surface may be simple grittiness, or may depend upon mulberry-like nodulations formed in the process of crystallization. The surface may be smooth. The fractured surface shows no lamination, but is homogeneous and beautifully crystalline. Eichhorst compares it to gum camphor, asbestos, or white marble. There may be a central dark nucleus from which the crystalline structure radiates. The specific gravity is light. The stones can be cut readily. Calculi composed of cholesterin are inflammable and burn with a bright flame.

3. *Bilirubin Calculus.* Bilirubin, biliverdin and combinations of these pigments with calcium carbonate form stones of rather infrequent occurrence.

(a) *Bilirubinate of calcium* with some added substance forms stones which are usually of rather small size, rarely larger than a marble. There may be a single one or several. They are commonly facettled. The characteristic color is rust color, varying to brownish-black. On section they are laminated, all the lamina having a dark brown or reddish color. They contract, crack, and often shed their outer layer when dried. There is usually cholesterin in the outer layer, and the central nucleus may be crystalline. Murphy (*Twentieth Century Practice of Medicine*, Vol. IX., p. 740) says: "Twenty-five per cent. of the outer layer is cholesterin, the remainder being principally bilirubin and bilirubinate of copper, with a small trace of iron."

(b) *Pure bile-pigment calculi—bilirubin calculus*—is much less frequent than either the cholesterin bilirubinate of calcium, or the bilirubinate of calcium stones. These stones are never large, according to Murphy, and may be found in the form of fine sand, or stones about the size of a pea. They may be rust colored, greenish or blackish. Some of these stones are rough on the surface, or mulberry-like. They usually crush readily, and when dried shrink, and may crumble away. They are often soft when fresh. This calculus is most frequent in the intra-hepatic ducts.

4. *The Calcium Carbonate Calculus.* This form of biliary calculus is quite rare. It consists chiefly or exclusively of calcium carbonate. It usually has a whitish or grayish color, a chalky appearance, and is heavy and hard. The broken appearance is like chalk. The stones of this class may be very large and are not infrequently associated with carcinoma.

FACTORS INVOLVED IN THE FORMATION OF GALL-STONES.

1. *The Bile.* The chemical substances which enter into the formation of the gall-stones are all normal constituents of the bile, though sometimes in such small amounts as to make it questionable just how it is possible for them to collect in amounts necessary to form calculi.

(a) Cholesterin occurs in very small amounts in the bile, but is always

present. The percentage in normal bile, according to the analysis of Hammersten, varies from .063 to .096. These variations occur in health irrespective of diet. The cholesterin is supposed to be a waste product of metabolism on its way to excretion. It forms part of the composition of the various tissues, especially of the nervous system, and is supposed to be held in solution in the bile by the bile salts. The sodium salts (glycocholate and taurocholate of sodium) may have something to do with it, and there has been noticed a tendency for cholesterin to be precipitated when these salts are defective. Cholesterin is also precipitated if from any cause the bile becomes acid.

Murphy follows Naunyn's views in his paper (*Twentieth Century Practice of Medicine*, Vol. IX.) and insists upon it that the cholesterin which enters into the formation of gall-stones has nothing to do with the bile, but is derived from the epithelial cells of the gall-bladder, which, in all cases of calculus, are destroyed in large numbers. This view may be correct. The precipitation of cholesterin is greatly increased by the presence of a cholesterin calculus in the gall-bladder. Murphy supports his view of the epithelial origin of the cholesterin by pointing out that when the gall-bladder is shut off from communication with the ducts and no bile enters it, the formation and precipitation of cholesterin goes on uninterruptedly.

(b) Bile-pigments. Like the cholesterin, the actual percentage of these substances in the bile is, in spite of the intense color they impart to the fluid, small. Referring again to the analysis of Hammersten, we find them present in .81-.91 per cent. The occurrence of calculi composed of the bile salts and pigments is thought to signify nothing more than that there has been stasis and precipitation. The bile pigments, especially bilirubin, are soluble in alkalis, and are precipitated by acids, so that the same condition that predisposed to the precipitation of the cholesterin will also predispose to precipitation of the bile pigments.

(c) Calcium carbonate occurs in the bile in very small amounts, so that it is extremely improbable that the calculi of this composition are formed solely by its precipitation. Especially is this true as the presence of considerable calcium carbonate in the food or drink does not increase the quantity excreted by the bile. The most recent researches seem clearly to prove that the calcium salts are divided from the mucin which occurs in abundance in inflammation of the gall-bladder. From the description of the calcium carbonate stones already given, it will be remembered that they are nearly always homogeneous calculi without laminations. This condition is readily understood from the fact that the presence of lime in the bile prevents, to some extent, the precipitation of the pigments and their salts. In excess the calcium salts probably favor the precipitation of the bile pigments.

The original idea that the formation of gall-stones depends upon in-

spissation of the bile has long since been abandoned, as it is clear from their varied and complex structure that more complicated processes are involved. There can be no doubt, however, but that stagnation of the bile greatly facilitates the process. Naunyn says, the formation of calculi depends essentially upon (1) alteration of the mucous membrane, with desquamation and destruction of epithelium and outpouring of mucus; (2) stagnation of bile in the passages permitting the precipitation of its constituents.

2. *The Mucous Membrane.* Mention of the probable importance of the mucous membrane has already been made in speaking of the possible epithelial origin of cholesterin and the mucous origin of calcium. In nearly all cases of gall-stones there is found a more or less marked catarrhal inflammation which may be in part secondary to the presence of the stone, and in part contributory to it. That disease of the mucous membrane has much to do with calculus formation no one who has studied the question can doubt. It is, however, improbable that it is as important a factor as the condition of the bile and the presence of foreign entities.

3. *Foreign Bodies.* Gall-stones, like other calculi, sometimes form about foreign bodies as nuclei. A number of these have already been mentioned—fragments of parasites, needles, plum-stones, etc. Foreign bodies intentionally introduced into the gall-bladder by Lanes invariably failed to produce calculi, even though they altered the reaction and composition of the bile. Mayer also had similar results. Both used dogs for their experiments, which was unfortunate, as dogs do not have gall-stones. Even in relation to foreign bodies it may be possible that some alteration in the condition of the bile must necessarily precede calculus formation.

4. *Bacteria.* Bacteria have been found in calculi by Gilbert and Dominici, and led to numerous experiments, in which cultures were injected into the gall-bladder. The common result of these experiments was failure. Naunyn lays great stress upon the bacillus coli communis in exciting inflammatory changes in the walls of the gall-bladder and so predisposing to the formation of stones. The length of time during which the typhoid bacillus may remain viable in the gall-bladder is remarkable, and well known. During its residence mild irritation probably results, which favors subsequent calculus formation. Welch has reported a case in which the bacterium coli communis was found in the centre of a gall-stone. Osler has dwelt upon the effect of the typhoid bacillus upon the gall-bladder, in which it produces a catarrhal inflammation predisposing to gall-stone formation.

THE MECHANISM OF THE FORMATION OF GALL-STONES.

When the conditions favorable to the formation of gall-stones occur, there collects within the gall-bladder an indefinite mass of inflammatory products comprising mucus, desquamated epithelium, zooglea masses of bacteria, etc., upon which the bile salts precipitate. This forms the nucleus

of the later calculus, and consists in part of substances which will later be removed. As time goes on, the biliary pigments are deposited layer after layer upon this, until a calculus is formed. Thus far the formation of the stone is simple enough. The addition of cholesterin is considerably later, and is a slow infiltration process, the substance crystallizing in the interstices of the stone as the organic products are dissolved out. Cholesterin may also replace the bile pigment compounds when they yield to subsequent solution. As the calculus becomes larger, and the damage done to the wall of the gall-bladder is greater, more cholesterin seems to be formed by the lining epithelium, which is deposited as an incrusting layer upon the surface of the calculus. Lamina after lamina is successively deposited according to the variety and size of the calculus.

From a number of suitable nuclei, a number of calculi may form, there seeming to be no other limit to the possible number than the capacity of the gall-bladder to retain them. The stones are at first all inclined to assume a spherical form, but as they enlarge and come in contact with one another, the successive lamina are either deposited upon adjacent stones, combining them and making from several small stones one large one, or the further deposition of the component salts will take place upon the surfaces not in contact, filling out the interspaces and so producing the peculiar shaped stones so often seen. The facets upon the calculi at the surfaces of contact are only in rare cases the result of friction. I believe that in the calculus mass shown in the first illustration there was occasional friction between the articulating surfaces. The common polygonal stones are not the result of pressure or friction, but originate as round stones, which do not fit well together but have gaps between them which are subsequently filled in by additional growth of the stones until they are in almost complete contact over their entire surfaces, opposing one another by surfaces curved and flattened so as to accommodate themselves perfectly to their environment.

Prevention of Gonorrheal Infection. Dr. Monroe advises the following method of preventing gonorrhea: The patient is ordered to urinate immediately after coitus and wash his genitals with tar soap and water. Then inject 3i of a solution of permanganate of potash (3i to f3vi of water) and immediately allow it to pass out; then another 3i injected and retained for about a minute by closing the meatus with the thumb and finger. A small piece of cotton is saturated with the medicine, and the penis and scrotum washed, allowing them to dry without the use of towel. The results are claimed to be very satisfactory.

SOME PRACTICAL USES FOR ELECTROLYSIS.¹

BY W. BLAIR STEWART, A.M., M.D.,

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ELECTROLYSIS is a process of destruction or disintegration of organized tissues or fluids of the body, or the separation of chemical compounds by electricity. I wish to speak particularly of the use of the electric needle and bougie. The *negative* electrode or pole of the battery is the one used for destructive purposes (electrolysis), while the positive electrode or pole is sedative in character. The galvanic, constant, or silent battery is the one used. While not absolutely essential, the best and most satisfactory results are obtained by the use of a milliampere meter—an instrument to measure the exact strength of current. Any make of galvanic battery may be used.

The electric needle may be made of platinum, steel, or composition metal—in fact I once used a fine steel sewing needle. Always use the platinum needle, as it is pliable; cannot break off in the tissues as a steel needle may do if your patient moves suddenly, and is best adapted for carriage in your case. Should you accidentally (not excusable) connect your positive pole to the needle of steel or composition, there will be a black or rusty oxid of iron deposited in the tissue as permanent as a tattoo mark. Always be sure of two things: First, connect your needle or electrode with the negative pole of the battery, and be sure you are right; second, see that your needle is clean and aseptic. Select a short, uncomplicated needle holder that can be easily held in the fingers, as a pen holder would be. Some prefer a holder which has combined with it an automatic button for making and breaking the current. As this requires an extra motion with the hand, I find it objectionable, and often very inconvenient. My preference is for a plain holder, and the current is made or broken by the patient grasping the positive electrode with either hand and releasing it as indicated by the operator. Among the more important uses for the electrolytic needle are the removal of superfluous hairs, moles, warts, birth-marks, small tumors, enlarged veins, small aneurysms, etc.

Superfluous hairs must be removed one at a time. Insert the needle carefully into the hair channel until it pierces the bulb or bottom of the hair follicle. This is indicated by a peculiar resistance at first, followed by a slight sensation of freedom of the needle point that is so characteristic that it must be practiced to be appreciated. Always introduce the needle

¹ President's address before the Atlantic County (N. J.) Medical Society, February 8, 1899.

with an open or unclosed current. When the hair follicle is pierced the current is closed, and in about two to six seconds a small bubble or two is seen about the needle. This usually suffices to destroy the hair root. Always break the current before withdrawing the needle. If you do not, your patient will experience an unpleasant shock or stinging pain. If you have been successful, the hair will come out readily without feeling to the patient. If you are compelled to use traction, the hair follicle is not destroyed and the hair will return. The strength of current used should be from three to six milliamperes, or about the strength obtained from one or two of the small bichromate battery cells. Never remove two hairs at one sitting that are closely approximated, but select them at least one-quarter to one-half inch apart, this to prevent too much local irritation. I have removed two black beards from ladies, two moustaches, hairs from moles, and in other parts, and none have returned. You can remove from ten to seventy-five hairs at a sitting, according to your patient. Bathe the face afterwards with hot water and apply a soothing unguent. A current of ten to twenty milliamperes will destroy surrounding tissue and leave white scars, while the lighter current will leave none. Moles are removed by piercing the base on several sides and using a current of from ten to fifteen milliamperes, or even weaker currents will often suffice. The change of color will indicate your success or failure. Too strong currents will leave scars. Warts and small tumors are removed the same as moles.

Birth-marks are dependent upon enlarged capillary vessels and, if not too large, can be readily removed by introducing the negative electrode needle into the layer of tissue containing these vessels. If four to six milliamperes of current are used, the vessels surrounding the needle are contracted and destroyed and, with the following contraction of the scar tissue formed, will be permanently effaced. Small areas must be treated at each sitting until the result is accomplished. Enlarged veins of the face, nose or ears may be removed by introducing the needle into the caliber of the vein as far as it can be seen, and, with a current of four to six milliamperes, gradually withdraw the needle and a small white line is left, without the least blood. In a day or two this line disappears, and no trace of the vein is left. The so-called whiskey nose can be "done over" by this method.

A few words only on the use of the bougie. The olive-tipped metallic bougie is probably best, and the stem should be covered with hard rubber. Urethral strictures can be permanently cured by electrolysis and without the use of large sounds. A stricture is composed of scar tissue. Scar tissue is readily disintegrated by negative electrolysis, while healthy tissue will not disintegrate with the same strength of current. Test the caliber of the stricture first, and use the electrode slightly larger than will ordinarily pass. If it is impermeable, use your smallest electrode. Remember that mechanical force must not be used. Introduce the aseptic

electrode, anointed with glycerin as an emollient, until the olive tip is in contact with the stricture. Place the positive pole over the pubes or on the perineum. With a rheostat or current controller gradually turn on the current until five to six or eight milliamperes are registered. Another guide is to go by the feelings of the patient. If there is too much pain or burning, your current is too strong. Use only the mildest pressure on the bougie electrode and in almost every case it will slip past the stricture in from two to eight minutes. When the current is broken and the instrument withdrawn, you will find the back of the olive tip covered with a frothy substance which is part of the disintegrated scar tissue and the fluids present in the urethra. Never prolong a treatment over ten to twelve minutes. Give treatments every third or fourth day and use a larger electrode each time until the urethral caliber is normal, which will require from six to ten treatments. Contrary to some recent reports published, ten to fifteen milliamperes will cause severe pain; will destroy too much tissue at one time; will be liable to produce more scar tissue in healing; and can be likened only to division with large bougies. With weak currents your patient should experience no discomfort and should be able to leave your office at once for his business pursuits. No injections are necessary. Spasmodic strictures will relax at once or within one or two minutes under this method. Bloody discharges should never follow a treatment. Chronic gleet discharges, due to ulcerated patches or small scars in the urethra, can be cured entirely in many, if not all, cases, as many of my cases show. Prostatic conditions can also be reached in like manner. Electrolysis is also used in treating stricture of the lachrymal duct, esophagus and rectum.

Do not expect too much from electrolysis, and do not condemn it because you have failed to be successful in every case. Some things can be done definitely by what we might call mathematical rule, but in doing them certain technique must be followed strictly or failures will positively result.

Local Anesthesia in Major Operations. Dr. Suslow, of Kieff, employs local anesthesia, even in such operations as excision of cancer of the lip, skin-grafting by Thiersh's method, amputation of the finger, radical cure for hydrocele, Bassini's operation for hernia, removal of cervical glands, of cicatricial tissue from the vagina, excision of a rib, etc. The anesthesia is produced by hypodermic and intradermic injections of $\frac{1}{2}\%$ warm solution of hydrochlorate of cocain, preceded in some cases by a hypodermic of 0.008 grm. of morphine $\frac{1}{4}$ of an hour before the operation. When operating on the extremities, an Esmarch bandage is applied. The injections are made along the line of incision, anesthesia manifesting itself in 3 to 5 minutes.

TALKS TO GENERAL PRACTITIONERS.

TREATMENT OF GONORRHEA IN WOMEN.

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IN the treatment of gonorrhea in the female, the general principles are the same as those followed in the male, although the technique is different. In the male the urethra and its mucous continuations require treatment; while in the female we have in addition the vulva, vagina, cervix, and the various openings which lead from these. We will first consider the urethra.

As the most prominent symptom is the burning on urination, with a frequent desire, to relieve these an alkali should be administered. From $\frac{1}{2}$ to 1 drachm of bicarbonate of soda may be administered every four hours, until the urine is neutralized, after which a sufficient amount, only, is given to keep the urine in this condition. In lieu of the soda, acetate of potash in half-drachm doses may be given. In addition to the above, extract of hyoseyamus may be given in two-grain doses every three hours, or of the tincture one drachm. The small doses usually recommended by the books are useless. After the ardor urinae has passed off, salol, in five-grain doses, may be prescribed every four hours. Other remedies are oil of sandalwood, copaiba, and urotropin.

Local treatment to the urethra is not always required, nor necessary. The urethra being a short canal, and frequently flushed by the urine, it often recovers before the cervix, glands of Bartholin, etc., are well. The passage of urine in two glasses will usually indicate whether the urethra has recovered or not. If recovery does not take place with the treatment outlined above, then local applications are resorted to, as in the male. To prevent the solution from entering the bladder, when being injected into the urethra, pressure should be made with the finger at the meatus internus. Instead of injections into the urethra I sometimes substitute direct treatment by the use of absorbent cotton wrapped on a probe. The cotton may be moistened with a solution of carbolic acid, one per cent.; nitrate of silver, five per cent., or with any other solution indicated. One of the short urethral tubes used

in the treatment of the male may be utilized. After the tube is introduced it may be slowly withdrawn and the solution on the cotton applied as the walls of the urethra fall together.

In those exceptional cases where the vulva is principally involved, such as we find in children and in virgins of older years, it is necessary to put them to bed, until the more acute symptoms subside, which they soon do under applications of hot boric acid solution. The treatment of the vagina and cervix must be conducted by irrigation methods, and can usually be carried out by the patient when properly instructed. Two quarts or more of the solution should be used three times a day. Permanganate of potassium, $\frac{1}{3000}$, or bichlorid of mercury, $\frac{1}{4000}$, are the best. If an astringent is desired, the following may be used:

R̄ Zinci sulph. (vel. sulphocarb.),
 Alum sulph., aa. ʒi
 Cupri sulph.,
 Ferri sulph., aa. ʒii

M. S. A teaspoonful to the pint of water.

A cleanly and convenient method is to have the patient arrange her fountain syringe, with the solution (preferably hot), at the proper height, then take an ordinary chair and tilt it *forward* on the seat of another chair. On the *seat* of this *other chair* a pillow may be placed for her head to rest upon. After everything is arranged, the patient lies down with her clothing drawn up out of the way, her limbs flexed, and outside of the legs of the chair, when the vaginal end of the tube is introduced, the solution allowed to flow into the vagina and it is then received in the pan, which is under the buttocks of the patient and within the legs of the chair.

A local application of nitrate of silver, twenty to fifty grams to the ounce, is to be made by the physician twice a week. This application may be made through a Ferguson speculum. After the introduction of the speculum, and a thorough cleaning of the os and cervix, about a drachm of the silver solution is poured down the speculum, when the os and cervix are bathed with the solution. As the speculum is withdrawn, the medicine comes in contact with the vaginal walls and they are thoroughly bathed. If the cervical canal is involved, this can be treated with tincture of iodine and carbolic acid, equal parts, the application being made with a cottoned probe. If the discharge persists from a lack of tone, which is sometimes the case, a large amount of boric acid may be packed around the cervix and held in place with a tampon. This is an excellent drying powder.

When the vulva-vaginal gland becomes involved, it is better to destroy the gland, for it is difficult to cure in any other manner. It should be opened from top to bottom, cleansed with peroxid of hydrogen, thoroughly curetted and finally packed with iodoform gauze. In chronic cases it is well to dissect out the entire gland.

TREATMENT OF CHRONIC ENDOMETRITIS.

BY E. E. MONTGOMERY, M.D.,

Professor of Gynecology, Jefferson Medical College.

No subject in gynecology has been prolific of greater discussion than the one now under consideration, nor is there any disease of the genital tract more worthy of our earnest study. By extension of inflammation from the endometrium, we have involvement of the contiguous structures—the parenchymatous tissue of the uterus and its peritoneal covering; but still more serious in its results is the spread upon the continuous tissue, that of the mucous membrane by which the tubes are involved, and finally the peritoneum.

Notwithstanding the recognition of the endometrium as an avenue for the extension of infection to the deeper structures, there are those who deny the existence of endometritis. The symptoms generally attributed to this disease are by one school assigned to inflammation and consequent exudate in the cellular tissue which, by obstructing the circulation in the uterus, causes passive congestion and increased secretion. Another ascribes the discharge not to the uterus, but to drainage through that organ from the Fallopian tubes, a theory difficult to explain when we remember that the uterus is filled with glands, while the mucous membrane of the tube is without any.

It is without doubt true that there are many cases in which there is tubal disease and cases of this in which careful examination reveals none of the uterus, but these are cases in which disease of the latter, through its more efficient drainage, has subsided. The limits at my disposal, however, do not permit me to enter upon the discussion of the valid evidence of endometritis, nor is such information necessary for the general practitioner. Your experience and careful observation teach you that there is an inflammation of the uterine canal characterized by local and general symptoms, often of marked influence, and you desire information as to the most effective means of combatting it before it produces too markedly baneful effects by the subsequent complications.

Treatment, then, must depend upon the presence or absence of complications. Endometritis complicated by peritonitis, cellulitis, carcinoma, myomata, and displacements, must be treated secondarily. The complication must receive first consideration.

The treatment appropriate to the uncomplicated disease would but add to the disorder. Our plan of treatment then requires first an accurate diagnosis. In some of the conditions named, the diagnosis will be readily

determined; in others, especially in doubtful cases of carcinoma and fibroid growth, digital exploration of the uterine cavity may be necessary, and preparation for such investigation is most readily ensured by dilatation with the laminaria tent, as presented in a previous talk.

In uncomplicated cases shall we resort to intrauterine treatment? This question has been one prolific of much acrid discussion. One party would condemn any and all intrauterine medication; the other advocates such treatment in every case. The truth, as usual, lies between the extremes. Local or intrauterine applications are capable of producing such baneful influences in cases unsuitable for treatment, that it sometimes becomes a question whether the patient would not have been more fortunate had she never been the victim of treatment, but this question is just as applicable to other portions of the body.

The first consideration for treatment is to secure free drainage, and, second, decrease congestion. Both these considerations are to some degree secured by placing and maintaining the uterus in its normal position, hence the value of tampons. They raise the organ to a higher level and thus decrease the congestion. Medicated, especially with glycerin, they produce a free, watery discharge, which still further depletes the uterus, and especially its glandular structure. Thus drainage and diminished congestion are both secured.

An open, patulous canal invites intrauterine applications. A narrow, tortuous canal should absolutely preclude all intrauterine treatment, unless dilatation has first been done. In such cases, the use of the curette, following dilatation, will be of value, and greatly shorten, if not render unnecessary, any subsequent local treatment.

In suitable cases, the treatment may be antiseptic, astringent or caustic, according to the conditions present.

Intrauterine irrigation with double current tube is very efficacious. For this purpose, hot water, plain or medicated, with bichlorid ($\frac{1}{3000}$), formalin ($\frac{1}{1500}$), boracic acid ($\frac{1}{100}$), or sodii bicarbonate ($\frac{1}{50}$) may be employed. The efficacious astringents are zinci sulph. ($\frac{1}{50}$) ($\frac{1}{20}$), zinci chlorid ($\frac{1}{100}$) ($\frac{1}{20}$), argent. nitrat. ($\frac{1}{10}$) ($\frac{1}{5}$). The astringents in the stronger solutions are also caustic.

Much value is often secured from the application of ointments in that they are not so readily discharged.

Ichthyol in ointment with lanolin, as a base, is of value. It may be used in strength of ($\frac{1}{12}$) to ($\frac{1}{4}$), when it proves germicidal, alterative and anodyne.

In closing this talk, we cannot do better than to reiterate that the *sine qua non* for all treatment must be free drainage. With that established, many cases will recover without further treatment.

TEST MEALS, AND THE BEST WAY TO OBTAIN THE GASTRIC CONTENTS AFTER THEM.

BY BOARDMAN REED, M.D.

To determine the digestive activity of the gastric juice, it is usual to give the patient a definite amount of food and drink, known as the test meal, and then remove some or all of the contents of the stomach at the time afterward when digestion should be at its height. Various kinds of meals have been proposed and are employed for this purpose. The most convenient one, and that which is in most frequent use in both Europe and America, is the Ewald test breakfast. It consists, according to Ewald himself, of an ordinary stale roll and one-third of a liter—about two-thirds of a pint—of fluid. The fluid may be either water or weak tea, without sugar or milk. Tea is that most usually ordered by Ewald and his assistants at their clinic in Berlin. A full goblet of water, not ice cold, answers the purpose quite as well, and is what I usually order for my own patients. In place of the roll, two moderate slices (or a little less than two ounces) of stale bread, or even half a dozen water crackers—not soda crackers—will suffice.



Such a meal should, under normal conditions, uniformly digest into a thin grayish liquid at the end of one hour from the time the patient begins to eat, and it is then you should withdraw the contents for examination and chemical analysis.

It is still advised in some works to empty the stomach in such cases by what is called expression. That is, a medium-sized tube is passed into the stomach, and the patient, with both hands over the epigastrium, is urged to make straining efforts. By holding the breath and active contractions of the diaphragm, the contents of the viscus are sought to be forced up through the tube. This generally succeeds in time in accomplishing the object, but in most cases only after such an amount of serious discomfort, dyspnea, retching, and often vomiting, as must disgust any patient. Indeed, this obnoxious method of getting up test meals and unskillful ways of performing lavage are largely answerable for the very general, though needless, dread of the stomach tube.

Various kinds of pumps or aspirators may be employed for the purpose of emptying the stomach. The best is the kind in use in Ewald's clinic, and is the invention of Kuttner, Ewald's first assistant. These are now to be had at some of the instrument makers in this country, and a cut of one is

herewith shown. It is similar to the Politzer air bag, only larger, of thicker rubber, and without any valve at the top. It is first compressed with the hand, and, while held so, the nozzle is introduced into the end of the tube. Then, when allowed to expand, after being carried down to a point below the level of the lower border of the stomach, sufficient suction is exerted, with the help of siphonage, to empty the contents of the stomach with a minimum of disturbance or inconvenience to the patient.

If the tube should be blocked with mucus in passing down, as sometimes happens, no contents will flow out. In this case, you should disengage the bulb, and attach it to the tube again without compression. Then, by compressing it, you will force its contained air downward through the tube and thus clear out the obstruction. The air thus forced into the stomach causes little or no inconvenience though, exceptionally, enough of it may return with the fluid contents to fill the bulb and prevent a complete emptying. You should then detach the bulb again and introduce it compressed. This, provided the tube has been introduced just far enough, never fails to bring up either all the contents, or thirty or forty cubic centimeters, which are enough for all the necessary tests. If not, the difficulty may be that the stomach contents have passed prematurely into the duodenum as a result of excessive peristaltic action. Full and detailed directions concerning the introduction of a tube will be found in the first of this series of Talks in the October number of the *INTERNATIONAL*.

Leube and Riegel have recommended and used largely a test dinner to be taken in the middle of the day. It consists of 400 cc. (13 fluid ounces) of soup, 60 grams (2 ounces) of beef, and 50 grams (1½ ounces) of wheat bread or a roll. Sometimes a potato is added. The time for the examination of this meal is about three hours afterward.

The ordinary American generous mixed breakfast, with meat, bread or rolls, potatoes and coffee, approximates closely the Leube test meal, and in the case of new patients who present themselves for the first time three or four hours after such a meal, you may find it convenient to empty the stomach at once for the purpose of analyzing the contents, thus gaining, without delay, important and sufficiently reliable information. But when such patients can return at another time, you should have them, if possible, take subsequently the standard Ewald test breakfast, which affords more exact data for comparison.

Do not make the mistake which is sometimes made of attempting to take up such a mixed meat meal at the end of one hour, since it will then be so little digested as not to pass through any ordinary tube without great difficulty. Pouring water into the tube may facilitate the process, but spoils the results of the analysis.

The only other test meal of which it is worth while to tell you is the Boas non-lacteal one for the purpose of testing for lactic acid in suspected cancer of the stomach. Boas advises washing out the stomach at

bed time to remove all traces of previous food, and then, in the morning following, the patient takes six to eight ounces of thin, well-cooked oatmeal porridge, which is prepared and served without milk, cream or sugar. An hour afterward this is brought up in the usual way. Boas' idea was that all breads, rolls, etc., contain milk enough to contaminate the product with lactic acid. But the view formerly advanced by him, that even a very small percentage of lactic acid present in the stomach was a sign of gastric cancer, is no longer accepted. Boas, however, still maintains, and with much clinical evidence in his support, that a decidedly large amount of this acid in the stomach, when not introduced with the food, must raise a strong suspicion of the existence of carcinoma. It is only exceptionally in the worst forms of chronic gastric catarrh, with great stagnation and an unusually excessive amount of fermentation, that a notable proportion of lactic acid is found in the stomach without the presence of cancer. Lactic acid cannot by the usual simple tests be demonstrated in the stomach contents in the presence of free hydrochloric acid.

My next talk will describe the most practicable quantitative tests of the stomach contents.

REPORTS OF INTERESTING CASES.

CHRONIC DISEASES OF THE COLON, AND SOME GENERAL DISTURBANCES CAUSED THEREBY.¹

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San Francisco, California.

DURING the early years of my professional career, a class of cases presented themselves to me of a chronic character, generally termed bilious, returning every two, three or four weeks, and I particularly noticed that such patients would have clear conjunctivae, a muddy, sallow skin, foul breath, more or less constipation, with perhaps occasional diarrhea. While the skin was sallow, the condition was not one of jaundice. These cases, living in malarial districts, were frequent subjects of malarial influence. After a very thorough investigation, I found the trouble existed in the colon, as a chronic colitis, with more or less ulceration of that organ, causing fermentation and gases; and by the absorption of these foul substances, the whole system suffered. I have in many of these cases found catarrh of the nose and throat, and dyspepsia. I think I can

¹ Some of these cases were included by the author in a previous report; but the importance of the subject, and the brilliant results obtained by the treatment, seemed to warrant the republication of them in this further report.—Ed.]

best illustrate the subject by a few cases of the many that have come under my observation.

CASE 1. The fate of a fellow physician, who talked with me only a few weeks before his death, no doubt had much to do with leading me into the closer investigation of such cases. His troubles were very aggravated, and obscure. There was almost no digestion, no matter how carefully he might diet; acid eructations, tender and bloated bowels. He drifted from bad to worse, tried different springs, and finally succumbed to debility and exhaustion. His urgent request was to be examined *post-mortem*. This revealed two large ulcers in the sigmoid flexure, one in descending colon, and one in the transverse colon. Had this case been understood, it could easily have been cured by antiseptic intestinal irrigation.

CASE 2. Mr. C., about fifty years of age, eye clear and pearly white, skin sallow, liver dormant, stomach bad. He was troubled with so-called gastro-hepatic catarrh, and about every three weeks or month would have a bilious attack. A few doses of brisk catharsis would relieve him. Examination of rectum showed a chronic congested condition of the mucous lining. I painted over this surface with a solution of argent. nit., strength 8 grs. to $\frac{3}{4}$ dist. water, and placed him on enemata of normal sol. sod. chlorid; about two or three quarts of this solution was used to flush the colon. The next night used two tablespoonfuls of the following mixture to two quarts of cool or tepid water:

R ^y Acid carbol.,	ʒiiss
Glycerin,	ʒiii
Listerin,q. s.....	ʒvi

M. S.—Two tablespoonfuls to two quarts of cool or tepid water. Use with syringe.

He kept this treatment going for three or four weeks, got complete relief, and for years has been a well man.

CASE 3. An elderly gentleman, who came from the East, purchased a small vineyard, and made his home there, expecting to live but a short time. He had been an invalid for over twelve years. He was a confirmed dyspeptic. He was cold all the time. His symptoms were dyspepsia—clear eye, sallow skin, constipation, vitality very low. I found rectum much congested, numerous red spots over the surface, and many small follicles, much like millet seed, under the membrane. I opened many of these at different times with bistoury and used the nitrate silver solution up to flexure. I then placed him on the salt solution one night, and next night the carbolic acid solution. Before I began his treatment everything he ate at once fermented, and he was a constant sufferer with pain and gases. I placed him on a diet of toast, milk and boiled rice. In one week he reported much relief. The second week vastly better. Third week began to eat almost everything he desired. At the end of two months had gained twenty-five pounds, and was

taking a hand at work on his vineyard. This man is now well and strong, after four years. He had some slight symptoms of a return of his trouble two years after I dismissed him, but a short use of his medicated washes relieved him. His disease was located in transverse and descending colon, as there was great tenderness along their course, and no doubt ulceration.

CASE 4. An old soldier, aged about fifty-five years, in the camps of the Potomac contracted diarrhea, and had had it as often as once per month since that time. There was the clear eye, sallow skin, debility, a great deficiency in red blood corpuscles, marked soreness over transverse and descending colon. This man was so weak he could only crawl around. His physician very plainly informed him there could be nothing done for him and he must soon die. I gave him these medicated washes for the colon, and put him on blood tonics. Well in a few months, and went to work.

CASE 5. Recently I was called to a patient in consultation with another physician. It was a case of dyspepsia, with tenderness over bowels, marked over the colon from cecum, around to sigmoid flexure. After the case was thoroughly gone over, we concluded to give her the irrigation per anum for chronic colitis. In a short time her tongue cleared, appetite improved, her distressing symptoms gave way, and convalescence began, and went on uninterruptedly. This patient had been ill for years.

We can place all old soldiers who have chronic diarrhea in this class. Some have also chronic rheumatism or neuralgia. The diagnosis can generally be made by a careful examination over colon, when tenderness can be made out easily. As to treatment, have the patient get a four-quart fountain syringe. Hang it about seven or eight feet high. Then have made a saturated solution of salt and use one or two tablespoonfuls to each quart of tepid water. The patient should lie on the right side, either on the floor or on a low cot, inclining slightly over on to abdomen. Introduce the tube into the rectum and turn on the water. Let it run very slowly, and have the patient retain as much of it as possible before going to stool. Use the salt solution one evening and the carbolic solution the next evening.

Internally for these cases I use

- | | | |
|-----|--|---------|
| R | Salol, | gr. xxx |
| | Iodoform, | gr. xv |
| M. | Ft. in caps., xv. | |
| S. | One 3 times a day, one or two hours after meals. | |
| R | Guaiacol carb., | gr. xxx |
| Ft. | in caps., no. xv. | |
| S. | One 3 times daily. | |

Should the patient be troubled with diarrhea, I give iodoform as above, and then the following:

- | | | |
|-------|--|--------|
| R | Zinc sulphocarbolat, | gr. xv |
| | Aqua pura, | ℥iv |
| M. S. | Teaspoonful every 4 or 6 hours during the day. | |

The diet should be carefully selected. Milk is by far the best, hot or made into soup, meat-broths, rice very thoroughly cooked with milk or cream, most of the mushes, but the diet must be suited to the case.

We must not forget that there are ways of medication other than by the mouth, and that intestinal irrigation in these troubles brings the medicine in direct contact with the lesions, and healing takes place rapidly.

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SELECTIONS.

A UNIQUE CASE OF CONGENITAL MULTIPLE NEVUS PIGMENTOSUS.

BY BURNSIDE FOSTER, M.D.,

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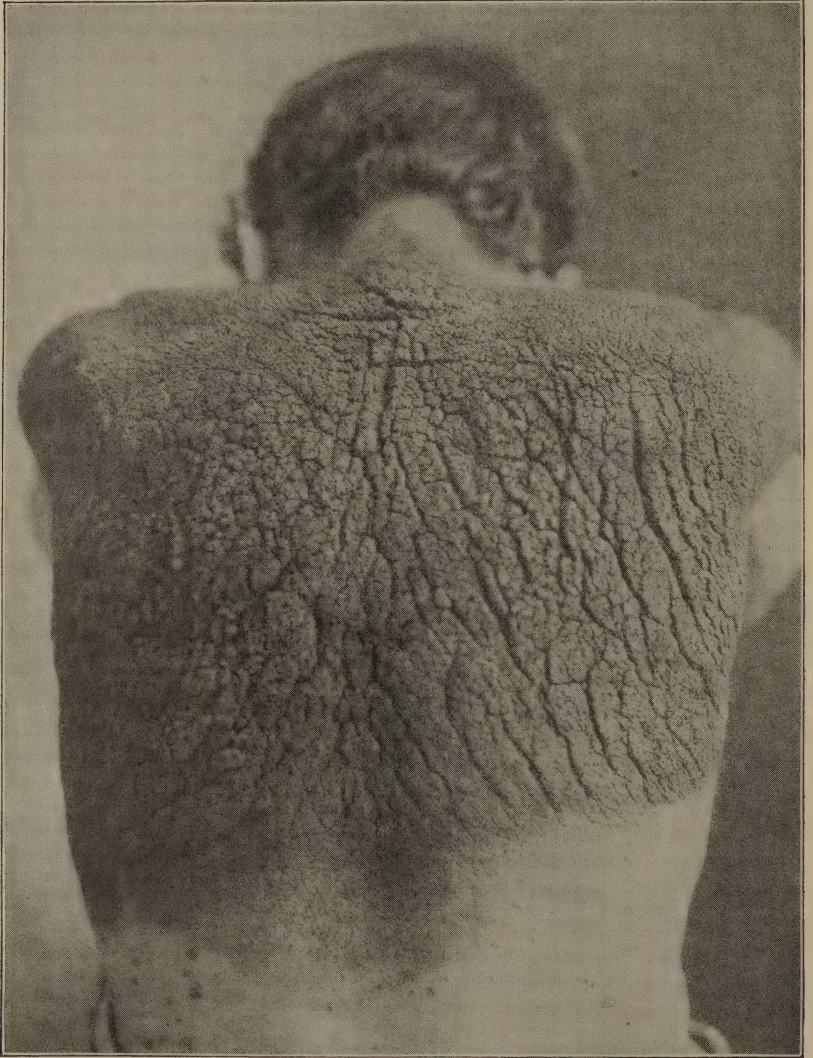
THE history of this remarkable case may be told in a few words. N. G., aged twenty-one, born in Sweden, family history negative. Strong, well-developed young man, apparently healthy in all respects. The appearances shown in the photograph existed at birth, and have not altered since, except that the large growth on the back has spread slowly during the last few years. There is a slight secretion from the deeper fissures of the large growth and an offensive odor. With the exception of the large growth, the moles are nearly all smooth and flat with, here and there, notably on the shoulders and right buttock, a growth of hair. The question of malignancy of this growth must be determined by the future clinical history. The accompanying photograph shows so well the appearances that no further description seems necessary.

Histology.—The sections submitted for examination were taken from the large growth between the shoulders. They were stained with hematoxylin alone.

Unna ("Histopathology," p. 1,129) has made a thorough investigation of these growths, so thorough, in fact, that it remains only for later investigators to confirm or disprove his findings on minor points. The tumor in question belongs to his class of "soft moles" which are carcinomata, and not endotheliomata, as claimed by Von Recklinghausen, and are developed, according to Cohnheim's theory, from epithelial cell rests, detached

from the epidermis in fetal or early life. In many places in these sections connection can be traced between the cell masses and the covering epidermis, there being, apparently, no basement membrane.

The epithelium is not, as a rule, greatly thickened, although there is



some increase in all its layers, but the rete pegs are enormously prolonged and form an anastomosing network. The basal layer is deeply pigmented in certain areas, not uniformly. In the meshes of the network and in the papillary body generally are seen the rounded, snared-off masses of cells.

Their borders are clearly demarcated, generally by connective-tissue. The cells show oval, vesicular, deeply staining nuclei, their contours being made out with great difficulty. Further down in the cutis are seen columns of epithelial cells, oftenest horizontal, between the connective-tissue bundles. The cells are closely packed, their nuclei are smaller, more elongated and less vesicular. More deeply, but still in the cutis, the cells are arranged in loose masses, more widely separated from each other, their outlines more clear and the nuclei larger than in any other situation. The appearances here strongly suggest a malignant carcinoma, except that there is no mitosis. Pigment is irregularly scattered through the cell masses and cords lying within and without the tumor elements. The appearance in the former case is often that of a nucleated clump of pigment granules. Vacuolation of the nucleus is frequently apparent both in the new growth and epidermis.

In the cutis the lymph-spaces are enormously dilated, but there is no proliferation of the lining endothelium. There is considerable proliferation of connective-tissue cells. Careful search failed to show any trace of coil-glands or ducts; here and there, however, attached by solid cords to the surface, were groups having the structure of sebaceous glands, evidently tumor cells pursuing their physiological course. In this tumor there is both epithelioma and acanthosis, *i. e.*, epithelial proliferation with and without fibrillation, the latter, of course, occurring in the epidermic meshwork.—*Jour. Cutaneous and Genito-Urinary Diseases.*

The Inflammability of Celluloid Hair Pins to the Static Breeze.

—The editor of the *Journal of Electro-Therapeutics* recently had a most disagreeable experience, which might have proved to be a serious accident. It may serve as a warning to those using static electricity. A young lady was being treated with the static breeze on the head from an ordinary static head crown. The crown was about 18 inches from the hair, and was attached to the negative pole of the battery direct, while the positive pole was in connection with the stool on which the patient sat. The day was clear, and the charge generated was moderately strong, certainly much less than has often been given. The hat having been removed, the shower came down in profusion over the head and shoulders, and was not at all disagreeable, until suddenly a scream, and the most painful expression of countenance gave warning that something had gone wrong. The motor was at once disconnected. A column of smoke arose from the patient's head, while she continued to scream the louder. Before he could reach her, a second column of smoke, and then a third, arose. He tore down the hair with all possible haste, and removed the charred remains of three celluloid hair pins, one of which was only partly destroyed. He succeeded in smothering the fire with his hands only after three spots of hair had been burned away, varying in size from a quarter to a half dollar, and the scalp had been quite seriously burned in one place and slightly burned in another.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Thyroid Gland in the Treatment of So-Called Rheumatic Affections and Especially Arterio-Sclerosis. Lancereaux (*Gaz. Med. Belge*, Nov. 15, 1899), thinking that myoidema was analogous in many respects with many herpetic and arthritic conditions, conceived the idea of giving thyroid gland in such conditions. He quotes these cases: A young woman with generalized scleroderma, affecting especially the face, neck, trunk and, above all, the upper extremities, where the skin was pigmented, thick, hard as wood, and seriously interfered with movements, was healed with increasing doses of iodothyryn. She improved rapidly, and at the end of four months was almost well. A woman of 32 years had for six months, under the influence of emotion or cold, vasoconstriction of the fingers, followed by dilatation. She had in addition profuse sweating and exaggerated salivation. The result of treatment was that the vasomotor condition materially improved, while the sweating and salivation altogether disappeared. A man of 36 years had chronic rheumatism, gout, and arterio-sclerosis, with increase of arterial tension, hypertrophy of the heart and interstitial nephritis with albuminuria. Treatment removed the joint pains and thickenings and the trophic trouble of the finger nails disappeared. At the same time, the arterial tension lessened considerably, and the nocturnal polyuria and albumin diminished; the heart diminished in size and the accentuated aortic second sound became almost normal. The same result was obtained in a man of 41 years, who had arterio-sclerosis, cerebral hemorrhage and interstitial nephritis with albuminuria. He has under his care several patients with arterio-sclerosis who are steadily improving.

On the Rapidity of the Elimination of Alcohol from the Animal Organism. Tamaschaw (*Vratch*, Vol. XX., No. 9) has endeavored to determine, by a series of elaborate and carefully conducted experiments, the rapidity with which alcohol disappears from the body, and whether the

administration of kola nut favors rapid elimination. For this purpose 20 rabbits were selected and divided into 6 groups. The first (consisting of 3 rabbits) was used for determining whether ethyl alcohol is normally present in the tissues. The result was practically negative. Second group (3 rabbits) was used to determine the amount of ingested alcohol eliminated within 2 hours, and it was found that 47 per cent. of the alcohol administered through a catheter was eliminated during that time. Third group (3 rabbits), the same within 5 hours. Result: 58 per cent. eliminated. Fourth group (4 rabbits), the same within 10 hours. Result: 70 per cent. of the alcohol could not be recovered. Fifth group (4 rabbits) was used to determine the influence of kola on the elimination of alcohol, and the following results were obtained: The administration of kola facilitates the elimination of alcohol to a slight degree (7 per cent.); but, at the same time, seems to prevent the lowered temperature from attaining its normal limit. The sixth group established the fact that within 24 hours the entire amount of alcohol is practically eliminated from the body, but still the author supposes that a slight, undetectable amount may remain, which, when accumulating after repeated ingestion, may lead to chronic poisoning.

A. R.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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The Mechanical Treatment of the Edema of Heart Disease.

Borgherini (*Archiv. fur klin. Med.*, Band LXI., Heft 5 and 6) recommends the original method of Traube, modified by the introduction of asepsis. Four incisions are made in the legs, one in each side over the malleoli, and two in the skin of the calf. These incisions are 2 to 3 cm. long, extend down to the subcutaneous tissue, and are made with the greatest care as to asepsis. The wounds are then covered with aseptic gauze, the whole limb is wrapped in sterile cotton wool, and bound with parchment, leaving a small portion of the heel uncovered. A bandage is then applied over the whole dressing. The patient is placed as comfortably as possible—usually in a semi-reclining position on the edge of the bed, with his legs supported by a stool—and a basin is arranged to catch the fluid that drains through the opening at the heel. The dressing is changed

with all due care once in 24 hours. After the disappearance of the edema, the wounds heal readily. The dropsy of heart disease, after a certain stage is reached, is in itself a cause of cardiac weakness by increasing the resistance to free circulation in the peripheral vessels. The fluid is moreover a reservoir for the collection of toxic substances that the kidneys fail to throw off in their weakened condition. The indications for the institution of the mechanical treatment are the failure of the heart to respond to the usual stimulants and the collection of a considerable amount of fluid in the subcutaneous tissues. The results are the strengthening of the heart's action and renewed efficiency of internal medication. The kidneys also are relieved from their congestion, and the urinary secretion is raised to the normal amount, and often a true polyuria follows that relieves effusions into the serous cavities. The fluid withdrawn is a true transudate. Its quantity in the 24 hours varies according to the position of the patient and the number of incisions and amount of edema, from 6 to 13 liters. Gerhardt has observed stupor and mild delirium and Klemperer an acute anemia of the brain during the treatment, all of which quickly pass away and can probably be avoided by keeping the patient as nearly prone as possible. B. reports 3 cases, all of whom were decidedly benefited when all other measures had failed. In one case an erysipelas of the leg quickly healed as the edema was removed.

The Relation of the Trachea and Bronchi to the Thoracic Walls as Determined by the Roentgen Rays. Blake (*Amer. Jour. of Med. Sciences*, March, 1899) reports an interesting series of observations upon this subject. He employs cadavers hardened with formalin solution and into whose tracheae a metallic alloy had been injected. He arrives at the following conclusions: The trachea which is in the median line at the lower part of the neck lies in the right sternal line at its bifurcation, which corresponds to the right side of the center of the vertebrae posteriorly, about the level of the intervertebral disk between the fourth and fifth vertebrae, which points nearly to the tip of the fourth thoracic spine. This point is not absolute, as it is influenced by the respiratory movements and by the position of the head and neck. Anteriorly, this point in adults is just internal to the junction of the lower border of the second costal cartilage with the sternum; in children under the right border of the sternum at the level of the third costal cartilage. The relations of the stem bronchi are given at length, and the reader is referred to the original paper for details.

Heredity in Tuberculosis. Hauser in an important article (*Deutsches. Archiv. für klin. Med.*, Oct. 27, 1898) gives an exhaustive review and criticism of the work already done upon this subject, and adds the results of a series of experiments upon the lower animals. The cases of undoubted bacillary ante-partum infection recorded in literature number 18, according to the writer's analysis. Of these all have inherited the disease from the mother, and not one from the father. The mother has almost always been suffering from an advanced form of the disease at the time of birth, that has rapidly proven fatal. Even in these cases, only 10 per

cent. of the children are tubercular. These facts are in direct opposition to the well-known conclusion from statistics that the occurrence of tuberculosis in the offspring comes quite as often when the father has the disease as when the mother is afflicted. It is to be noted that the semen contains tubercle only in the most acute or advanced cases in men. In congenital tuberculosis, 80 per cent. of all the children show localization of the disease to the liver, or the portal lymphatic glands. In all other decades of life such lesions are very rare. This form of tuberculosis, which undoubtedly occurs as has been demonstrated in many fetuses and young infants, may be regarded as a terminal infection similar to the general dissemination of other micro-organisms throughout the body in the agonic period. To settle the question whether a true bacillary infection before birth plays any part in the causation of tuberculosis, researches will have to be made in cases in which the parents do not show an advanced stage of the disease. It has been shown that in families in which one or both parents have died with tuberculosis, most of the children have been born while the disease was in a very early or latent stage. Again, tuberculosis in some families apparently skips one generation to reappear in the next. Hauser has made a series of experiments upon rabbits and guinea pigs, in order to determine the possibility of hereditary bacillary infection in instances in which the mother had the disease in a localized form. He had not one positive result. He watched the offspring of the animals thus infected for two generations, and could discover no lack of strength or nutrition in any of them, nor did any develop tuberculosis. He denies the analogy sometimes drawn between the hereditary transmission of syphilis and tuberculosis, because in syphilis the earlier stages of the disease are most dangerous to the child and the symptoms appear very soon after birth. Baumgartner's opinion that apparently primary tubercular affections of the bones, lymphatic glands and brain are always an evidence of latent congenital tuberculosis is not true, as it has been shown that infection can occur in these localities from without, through the mucous membrane, without causing lesions at the point of entrance. Hauser does not believe that the tubercle bacilli can remain latent in the tissue after entering the body in fetal life. He concludes that unlike syphilis, direct bacillary congenital infection cannot be considered as a factor in the causation of tuberculosis. So-called cases of congenital infection are really the result of post-partum infection through the usual channels. There is, however, probably an inherited susceptibility in such children to the tubercle bacillus. Full tables accompany the article.

Widal's Method Used in Differentiating the Bacillus of Hog Cholera from Other Micro-organisms. Schwartz, of Russia, found that the serum of a dog immune to hog cholera will produce agglutination of the bacillus of hog cholera, while the bacillus suisepitemiciae, the comma bacillus and bacillus of typhoid fever are not affected by this test.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Perforating Ulcer of Duodenum; Operation; Recovery. Taylor (*Georg. Jour. of Med. and Surg.*, Feb., 1899) reports a very interesting and instructive case of duodenal ulcer, in which an operation saved the life of the patient. This, in so far as the author could ascertain, is the second case of recovery reported. The symptoms of this affection are, as a rule, obscure and confusing, the classical diagnostic signs being exceptionally present. In the case reported by the author a diagnosis of appendicitis was made, the patient, a girl seventeen years old, having suffered from some non-localized intra-abdominal pain. About a week after the pain occurred perforation took place, but was not attended by any severe symptoms. A circumscribed abscess formed, which soon burst into the peritoneal cavity, precipitating the patient into a condition of extreme collapse. With a diagnosis of a perforated appendix, the patient was sent to the hospital, and the usual operation for appendicitis made. The appendix, however, proved innocent. The incision was enlarged downward and the uterine adnexa searched, but they were not at fault. Attention was then directed to the bile tract, and the incision carried upward to the ninth costal cartilage. The bile tract was also found free from any morbid condition, but in this situation the duodenal perforation was easily discovered. It was situated on the anterior surface of the third portion of the duodenum, about midway between its free border and mesenteric attachment. Notwithstanding the beginning general infection and the large amount of pus in the peritoneal cavity, the patient ultimately recovered.

Esophageal Stricture—an Analysis of Forty Cases. Kelynack and Anderton (*Med. Chron.*, Vol. X., No. 2) have elicited the following facts from post-mortem examinations at the Pathologic Department of the Manchester Infirmary. Among 4,859 cases, esophageal stricture was found in 40; 6 of these were simple or fibrous, the others malignant. The former were all in males, the maximum age being 47, the minimum 12 years. In 2 of the 6 cases the stricture was practically impassable. Ulceration at the site of the stenosis occurred in 2 cases. In 1 case the etiologic factor was half a tumblerful of turpentine, swallowed 4 to 5 years before difficulty in swallowing was first noticed. Dilatation above the stricture occurred in 2 cases, in one of which the entire circumference was involved. In one case

numerous small superficial ulcers were discovered near the pylorus. Of the 34 strictures of malignant character, 26 occurred in men and 8 in women, the ages ranging from 39 to 71 in the former, and 29 to 57 in the latter. The consistence of the growth was more frequently hard than soft in the proportion of 2 to 1. The growth extended to the pharynx in 2 cases, and to the stomach in 3. In one instance, the stomach became implicated by extension along the gastro-hepatic omentum. Extension also took place by invasion of neighboring organs, through lymphatic channels and along the course of the blood-vessels. The average duration of the disease, as found in 20 cases, was $7\frac{1}{2}$ months; in one instance only it exceeded 13 months, while in another it was less than 3 months. In females it was nearly 2 months longer than in males. A family history of malignant disease was present in 3 cases only. As having a possible bearing on the disease, the following conditions were noticed: One man swallowed some solution of ammonia about 26 years prior to his admission. Another sustained a slight injury to his chest in a crane accident 6 months before admission. His mother died from cancer of the breast. A third had suffered from paroxysmal dysphagia for 20 years. In 3 cases the dysphagia dated from the following morbid conditions: In one, influenza 5 months before admission; cold with aphonia and sore throat 12 months previously in another, while in the third pneumonia occurred 3 years before, leaving the patient with a persistent cough.

A Clinical Study of the Relation of the Blood, the Urine and the Gastric Contents in Diseases of the Stomach. Lichty (*Phil.*

Med. Jour., Feb., 1899) establishes, by an analysis of 111 cases, the following facts: 1. The average hemoglobin-percentage is slightly above the normal in cases of hyperchlorhydria, and slightly below normal in cases of hypochlorhydria. 2. The average hemoglobin-percentage is higher in cases of gastric achylia than in those of hyperchlorhydria. 3. The average number of red blood-corpuscles varies with the hemoglobin. 4. The average specific gravity of the urine does not sustain any definite relation to the blood and the gastric contents in the various forms of disease of the stomach. 5. The study of the degrees of acidity of the urine in the various groups has not revealed any definite information. 6. While in averaging the cases there may be a certain relation between the blood and the gastric contents, yet in each group, individual cases show without a doubt that there is no such definite relation as will enable one to determine the condition of the gastric contents from the study of the blood and the urine alone. 7. The absence of any definite relation between the blood, the urine and the gastric contents is not peculiar to diseases of the stomach. The author further states that an examination of the stomach contents is especially valuable from the therapeutic as well as prognostic standpoint. Only the determination of the chemism of the stomach will furnish sufficient data for instituting a proper dietetic regimen, while all the other parts of a thorough physical examination are equally important as indicators of the general condition of the patient.

NEUROLOGY.

UNDER THE CHARGE OF

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Some Points of Special Interest in the Study of the Deep Reflexes of the Lower Extremities. Mills (*Jour. Nerv. and Ment. Dis.*, Mar., 1899, Vol. XXVI., No. 3) considers several important points under this head. First. Ankle clonus, with absence of knee jerk. He reports the case of a man paralyzed in both lower extremities, with similar areas of analgesia over the anterior and external surfaces of both thighs and legs; with vesical and rectal disturbance, and with marked heart disease. On each side the quadriceps jerk was present and the knee jerk absent; on the left side ankle clonus was obtainable. *Post mortem*: No gross nervous, or muscular lesion was found, but microscopically an unusual number of nerve fibers with beaded myelin were seen in a posterior root from the first lumbar segment; the anterior crural nerves showed some degeneration; tissue from the sartorius muscle was greatly altered. The writer attributes the loss of the knee jerk conjointly to disease of muscle and nerve, and explains the vesical and rectal trouble by the theory of muscular alteration. An impaired circulation, causing imperfect elimination of toxic substances, may have produced a condition of auto-intoxication and consequent muscular degeneration. The unilateral ankle clonus may have been brought about by an inflammation of the nerves to the tendo Achillis, the nerves of the calf probably escaping. In those cases of peripheral neuritis in which the knee jerk is lost and ankle clonus is present, the cells of the sacral region controlling the ankle phenomenon may possibly be hyper-excited by inflammation of the nerves having their reflex arc in the lumbar segments concerned in the patellar reflex. Sometimes certain forms of irritation of a nerve trunk may cause excessive irritability in muscles supplied by it. Knee jerk may be abolished from disease of any portion of the patellar reflex arc. The segments of the spinal cord included in the patellar reflex arc are situated between the second and fifth lumbar segments inclusive. The reflex arc of the tendo Achillis is probably situated somewhere from the first to the third sacral segments inclusive. When the patellar reflex is absent disease must exist in Westphal's zone, which zone is an area of the spinal cord, limited by an imaginary line drawn parallel to the posterior septum through the point where the posterior horn makes a bend; by the inner side of the posterior horn and by the periphery of the cord. Summarizing the literature on the subject, Mills concludes that the syndrome of lost knee jerk with the presence of ankle clonus may be due to a compression or destroying lesion involving the spinal cord in the region of the patellar reflex arc; to focal lesions in the reflex arc and lateral columns; to a combination of muscular and neural disease; to

developmental arrest of the spinal cord, on theoretical grounds; to a focal lesion in the cerebral cortex or cortical spinal tract, or to arrested development of this tract, associated with disease of the crural nerve and its muscles. Second. The significance of ankle clonus in the diagnosis of organic from functional diseases, especially hysteria. The author's views on the occurrence of ankle clonus in hysteria accord with those of Gowers, who believed that such an occurrence is so rare that it does not lessen the value of the sign in organic disease, and the most important sources of error in those who maintain the contrary are the non-recognition of co-existing organic lesion, the failure to properly estimate toxemia or malnutrition, and error in diagnosis. Cases of grave hysteria with muscular hypertonicity and the diathesis of contracture may afford examples of true ankle clonus which is, however, secondary to the diathesis or the muscular condition. In the examination of many cases of hysteria, hystero-neurasthenia and neurasthenia, organic disease having been excluded, ankle clonus of the persistent type has not been obtained; although irregular, abortive or spurious responses have been observed. Third. Patellar clonus. This has been said to represent the highest grade of reflex excitability of muscle or tendon in the lower extremity. It may be absent when ankle clonus is present or present when ankle clonus is absent; usually, however, the two phenomena are associated. It is probably present in hysterical cases under the same conditions as ankle clonus. Fourth. Tendo Achillis jerk in tabetics. In tabes the knee jerk and ankle jerk are most frequently absent. In cases of purely sacral tabes tendo Achillis jerk may be diminished or lost, and the knee jerks be present. It may be present when no knee jerks are obtainable. In cases of encephalic tumor, where the examination of the tendon reflexes suggests tabes, absence of the muscle phenomena makes the diagnosis of neoplasm probable, the most likely explanation being that a general toxemia, excited by the growth, has exerted its influence either upon the posterior roots of the spinal cord or upon the muscle itself.

Electricity as a Laxative. Hühnerfrauth gets excellent results in the treatment of constipation from the use of electricity applied directly to the rectum. It is best used in the form of the faradic current on the abdominal muscles, while the galvanic is directed to the intestinal tract. The galvanic electrode should possess a larger contact surface than usually employed. With the patient in the recumbent position, a large electrode, 40-60 cm., is placed on the abdominal walls in the position of the descending colon, while the other electrode is slightly warmed, lubricated with vaselin and introduced into the rectum. The sitting should not last more than 3 to 5 minutes, and the dose not exceed 2-5 M. A. Interruptions of the current should be avoided.

MEDICAL DISEASES OF THE KIDNEYS.

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Case of Movable Third Kidney. Cheyne (*The Lancet*, Jan. 28, 1899) reports a case of the above in a woman 22 years old, suffering from indefinite abdominal pain, indigestion, and a general hysterical condition. The only special feature in the symptoms was diminution in the quantity of the urine when the pain was severe. Mr. Coalban detected, on examination of the abdomen, a swelling below the umbilicus, which was tender and corresponded to the chief seat of pain. The patient being anesthetized Cheyne felt easily an irregular, flattened, tender swelling behind the right rectus muscle at the brim of the pelvis. The swelling was somewhat, but by no means freely, movable, and had a nodular character. It could not be felt from the pelvis and had no connection with the pelvic organs. No definite diagnosis could be made. Movable kidney was suggested, and was discarded on account of the situation of the tumor and the fact that it could not be passed into the loin. An explorative operation found a well developed kidney on the right side of the lower part of the spinal column, just at the brim of the pelvis, having its own ureter and blood supply. In addition the right kidney was found 3 to 4 inches distant, in the right loin and apparently of normal size. The left kidney, somewhat smaller than the right, was found in the left loin. The symptoms were relieved after this procedure, and no doubt were due to the mobility of the third kidney and probably slight pressure on, or kink of, the ureter.

A Case of Sarcoma of the Kidney, with Nephrectomy. Winslow (*Maryland Med. Jour.*, Feb., 1899) reports case in a female 21 years old, with family and previous history good. She was quite nervous and had St. Vitus' dance when 11 years old. At 17 had convulsions and pain in lower part of abdomen, with no enlargement, lasting some years, and probably hysterical. She first noticed, while walking, a sensation of uneasiness as if something was "drawing up" in the lower part of the abdomen, accompanied with dyspnea. This sensation persisted and became exaggerated until she was in pain almost all the time. On physical examination the patient was found to be anemic, had lost considerable flesh in the last six months. A tumor was found on the left side of the abdomen extending from the rib to the pelvis. The tumor was smooth, elastic, and ovoid in shape and movable to a limited degree, and at one point there was a distinct

nodule. It was painful and sensitive to pressure, dull on percussion, and the colon resonance could not be determined. When the patient reclined upon her back a marked prominence on the left side of abdomen was seen. Lungs and heart were negative, bowels constipated, urine acid, sp. gr. 1.026; some albumin, no sugar, but epithelium, urates, red corpuscles and pus cells present. Pelvic organs were healthy. Diagnosis of sarcoma of the kidney was made. Four months later operation was done with the following result. The descending colon was found overlying the anterior part of the tumor, which extended beyond the middle line of the abdomen. The meso-colon was spread out, and looked as if a layer of muscular fibers had developed in it, resembling the tissue of dartos. The posterior lamella of the meso-colon was divided and the tumor enucleated. It was encapsulated and its removal was not difficult. The ureter was larger, and renal vessels rather small. The growth arose from the pelvis of the kidney and was filled with cysts containing bloody fluid and with soft grumous matter. She recovered without complications. The growth proved to be a round-cell sarcoma, arising from the connective tissue of the kidney or its pelvis. Diagnosis was based upon (1) tumor, (2) pain, (3) hematuria. The prognosis was grave, and four months after operation it was reported that a recurrence was already in progress.

Movable Kidney. Wallace (*The British Med. Jour.*, Feb. 11, 1899) says his experience coincides with that of Greig Smith, that a considerable number of movable kidneys occur especially in the upper class. Of 14 cases under his observation 13 were females, of whom 7 were unmarried and only 1 of the others had borne children. He believes that emaciation, as a rule, is not the cause of mobility. Alluding to Drs. Cunningham and Kendal Frank's investigations, he said they still left it unexplained (1) why women suffered more frequently than men; and (2) why the right kidney was more frequently affected than the left. He does not believe that the liver has anything to do with this latter fact; probably variation in anatomical relationship and fixation would eventually be found to play an important part in initiating the condition. Indicative of this is the fact that movable kidney is not known to be more frequent in children than had been hitherto supposed. Recognition of movable kidney was easy, but mobility was not proportionate to other symptoms. Shape, swelling, direction and character of movement facilitated diagnosis. Clinically the symptoms could be grouped under four heads: (a) Mobility, giving rise to no symptoms; (b) pain, in no way characteristic of renal affections; (c) renal pain, distinctive of renal conditions; (d) gastro-intestinal symptoms, accompanied by or ending in neurasthenia. Generally the kidney was healthy. Intermittent hydronephrosis might be caused by movable kidney and most probably the valvular condition sometimes found in the ureter or pelvis of the kidney was a result of this, not a cause, the initial cause of the hydronephrosis being a kink in the ureter. In regard to treatment three classes of cases have to be considered: (1) Those in which the condition was found by accident, with no symptoms, require no treatment; (2) where palliative measures succeeded; (3) where nephropexy was necessitated.

DERMATOLOGY.

UNDER THE CHARGE OF

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Seborrheic Eczema and Injections of Calomel. Brault (*Annales de Dermatol. et de Syphilolog.*, Jan., 1899) reported to the French Society of Dermatology and Syphilography a case of eczema seborrheicum in which the eruption was made to disappear by the employment of injections of calomel. The author says: "I have previously called the attention of the Society to the marked but temporary action of calomel injections upon psoriasis. Lupus, elephantiasis and leprosy had been benefited by the same treatment. I wish to announce another observation of a similar character. I am treating at the present time a man of forty years, affected with tertiary syphilis, but who has not presented for a long time any cutaneous or mucous membrane lesions. This subject, in addition, has a typical seborrheic eczema in the region of predilection, namely, the chest. One cannot be deceived as to its nature. The affection is pruriginous, the center of the plaques irregular and yellowish-brown; the borders are of a brighter red and the plaques covered with greasy scales. Each time that this patient is placed upon calomel injections, the lesions fade and disappear, the improvement dating from the second injection. In about six weeks, however, the eruption returns. This is another observation to prove that if calomel causes certain skin affections to disappear, it does not cure them."

An Outbreak of Acute Dermatitis due to Zinc Salts in Clothing. Taunton (*Lancet*, Dec. 3, 1898, p. 1,470) reports a number of cases of inflammation of the skin due to the wearing of clothing impregnated with chlorid of zinc. A number of employees had been supplied with new blue frieze overcoats, immediately after which 34 of them presented evidences of dermatitis. The day on which they were first worn was a rainy one, causing the coats to become wet. The patients all presented, upon one or both wrists, or the neck, small, whitish, cream-colored points, which soon coalesced into larger patches, surrounded by an erythematous zone. In one case, a patch was present upon the back of the calf of the right leg, corresponding to the level of the lower margin of the overcoat. From some reason, this patient had omitted to put on his leggings that morning, and, as the day was wet, the moisture from his coat had soaked through his trousers. The patches were slightly depressed, and the appearance was strongly suggestive of necrosis of the

epidermis following the application of a strong irritant. Tactile sensation was impaired, but not lost. Some of the patches had a bluish tint, due, no doubt, to the dye of the coat. It was noted that the appearances were most marked in the neighborhood of existing abrasions. In three cases there was some spreading of the inflammation up the arm and enlargement of the axillary glands. That the moisture was necessary to the production of the dermatitis is proven by the fact that several employees received their overcoats a fortnight earlier, but only exhibited symptoms on the same day as the others, which was the first rainy day. The cloth was soaked in water and the solution subjected to chemical analysis. It was found to be of acid reaction and to contain chlorid of zinc.

Treatment of Eczema in Infants and Children. Allen (*New York Med. Jour.*, April 1, 1899) states the following to be the underlying principles in the treatment of eczema of infants: (1) Superintendence of the clothing, especially that which comes next to the body, with special reference to the diaper. (2) Regulation of the bath and daily washing; regulating the nursing periods. (3) Examining the mother's milk as to quantity and quality. (4) Prevention and correction of intestinal derangements on the part of both infant and mother, including constipation in the latter. (5) Protection of the infants' delicate cutaneous structures from those irritations which may arise from various causes, including soap, water, sun, heat and cold winds. The author believes it to be of the utmost importance, in order to secure good and permanent results in eczema situated in parts below the scalp, that the latter should be kept free of the dirty and greasy crusts so frequently observed. For this condition he employs the following prescription: R Resorcin, 0.5-1.0; washed sulphur, 2.0-4.0; lanolin, 5.0-10.0; lard, ad 100.0. In eczemas about the anogenital region and groin, he claims very satisfactory results from the use of a three per cent. water solution of methylene blue. This preparation is analgesic, protective and antiseptic. Children should be placed upon a vessel every two hours and so encouraged to urinate and defecate without irritating the cutaneous surfaces. In children with anemia and inactive secretions, the author recommends the following: Calomel gr. $\frac{1}{10}$; saccharated iron carbonate, gr. $\frac{1}{2}$; powdered white sugar, gr. ii, given in milk. To prevent scratching and rubbing and to retain the application *in situ*, particularly in eczema of the face, a mask for the scalp and face is advised. Strips of linen covered with the ointment applied to the desired regions are held in place by the mask. The author concludes by saying: "I find that the statement to parents, 'that their offsprings' skin eruption must not be too quickly healed,' comes rather frequently from those practitioners whose ability to effect a rapid cure might come into question."

Extra Genital Syphilis.—Dr. Posenkbist reports in the *Vratch* a rare case of chancre in the nasal septum, accompanied by a general eruption and other sign of syphilis. The patient was infected by her child 10 months old, who was infected by a female relative suffering from syphilis.

PEDIATRICS.

UNDER THE CHARGE OF

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Should Children under Ten Learn to Read and Write? Patrick (*Appleton's Pop. Sci. Monthly*, Jan., 1899) says that in the elementary schools of Chicago, from 50 to 72 per cent. of the school time is devoted to reading, writing and arithmetic. In most of the other large cities in the United States a still more prominent place is given to these studies. Patrick goes on to show that such an adjustment of the school curriculum is wholly accidental and is not founded upon our knowledge of child development. In writing, the child is obliged to sit still, a difficult thing for him to do; and, more than that, he is required to perform finely co-ordinated movements which he is not really fitted to perform. Thus a deleterious influence is exerted upon the whole nervous system. In writing and in reading, fixed attention is required, and this again is difficult for the young child to give. That various ocular disturbances are directly attributable to such studies, the author confidently affirms. In mathematics the young child is required to employ abstract reasoning, and symbols which convey but little to his mind, and it is a well known fact that activity in childhood is sensory and motor but not central. In other words, the association and apperception centers have not been developed. The author then shows how much more rational would be a curriculum in which nature studies, history and the modern languages occupied the most prominent places.

Treatment of Whooping Cough by Inhalation of Medicated Oxygen. Lacroix (*Gaz. Heb. de Med. et de Chirurg.*, Oct. 2, 1898) presents the results of his experience in treating 25 cases of whooping cough by inhalations of oxygen saturated with bromoform, bromid of camphor and cherry laurel water. He uses a reservoir called a saturator, which contains pieces of pumice holding the medicaments over which the oxygen is passed. A mouthpiece is placed over the patient's mouth and the gas impregnated with the vapors is thence inhaled. M. Coyon also treated over a hundred cases in this manner and M. Dutrambley has employed a similar method. The advantages are that the paroxysms of cough are modified, which diminishes both their number and intensity. Complications are obviated and the organism is strengthened and enabled to resist the invasion of other infectious diseases which so frequently follow pertussis.

Infantile Hysteria. Ferrien (*Arch. de Neurologie* IV., No. 223) reports 18 cases of very interesting character in from 1 to 14 years of

age. Among these, 5 gave the syndrome of meningitis, 4 of organic paralysis and contractures, 1 resembled a toxic paralysis, and 2 had polyuria and polydipsia, simulating saccharine diabetes, and 1 resembled coxalgia. He shows how frequently hysteria is associated with other neurotic foundations and organic diseases. In the treatment, he realizes that the largest measure of hope is to be had through appealing to the child's intelligence and latent powers of self-control, and by gently but firmly dominating its convictions.

Addison's Disease in Children, with the Report of a Case.

Lartigau and Happel (*Albany Med. Annals*, Jan., 1899) review the history of Addison's disease and report a case occurring in a boy of 12, who died with characteristic symptoms. A very careful autopsy was made and reported at length. Both adrenal glands were enlarged, of firm consistency, with calcareous deposits. The appearance of the surface, on section, is similar in both and consists in mottling, two diffuse areas of yellow, suggestive of caseous material, and elsewhere the surface presented a yellow brown color. In the right adrenal, the medullary portion was occupied by circumscribed or diffuse areas of calcareous matter, which took the eosin stain. In the remaining portion of the medulla, in the cortical areas, were seen diffuse extensive patches containing small round and elongated cells, the nuclei of which stained faintly and corresponded in their morphology to epithelioid cells, among which were small round cells, and also a few giant cells of the Langhan's type. Other portions showed areas of caseous degeneration. Of sections stained by the carbol-fuchsin method for tubercle bacilli, only 2 in 8 showed a scanty number of the bacilli. The left adrenal was similarly but less extensively affected. Tubercle bacilli were not found elsewhere, as might be expected.

A Report of Cases of Measles. Walter Lester Carr (*Archives of Pediatrics*, Jan., 1899) presents some valuable data, gleaned from the study of an epidemic of measles and 115 cases. At first skeptical as to Koplik's prodromal sign, he subsequently proved it to be a valuable evidence of beginning measles. The average duration of the whole attack was 26 days. The average duration of the eruption was $7\frac{1}{2}$ days. Fourteen deaths occurred, the causes being in 11 pneumonia, with other serious lesions; 3 of the pneumonia cases were lobar, and in 3 cases there was mixed infection found. On 7 there were careful autopsies made, and the whole paper is full of important, carefully-recorded data of a character useful to the student.

The Effect of X-Rays on the Skin.—Balzer and Mousseaux have observed that the action of the rays on the skin is far from being harmless, when long continued. In one case the skin of the right side, which was the one exposed to the X-rays, became red, thickened and eczematous. The nails fell off, and, when regenerated, were considerably altered. The hair of the right temple and the right eyebrow was destroyed, and in some places became bleached. This patient was exposed to the rays for a year.

THERAPEUTICS.

UNDER THE CHARGE OF

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The Efficacy of Guaiacol in the Treatment of Epididymitis.

Perry (*Med. Rec.*, Jan. 7, 1899) reports a series of 20 cases, in which he painted over the cord of the affected side 1 c.c. of the pure drug, while over the scrotum 2 c.c. of a mixture: 1 part guaiacol and 2 parts glycerin. Twelve cases were severe, 5 sub-acute, and in 3 the testicles were involved. In many of his cases the pain was promptly relieved; in 2, only partially; another, in which the pain was not severe, was not relieved; in some, another application was needed. All were cured within 7 days, 3 within 3 days and 5 in 4 days. Seventeen were gonorrheal, 3 traumatic. Laxatives and suspensory bandages were also used, and in some oleate of mercury to hasten absorption of the inflammatory exudate.

Ichthyol in Phthisis. Schiele (*St. Petersburger Med. Wochscht.*, Feb. 20) has used it in four cases, in which creasote had entirely disarranged the digestive system, with good results in each. Ichthyol, through its sedative, alterative and antiparasitic actions, has been recommended in almost every disease, and therefore should meet the requirements for use in phthisis. The best mode of administration is by giving one of the salts (ammonia or soda) in combination with ichthyol-sulphuric acid. Both are soluble in water, and can be mixed with other drugs as the case may need. The author used the ammonia salt and began with 3 to 5 drops, and increased to 20 or 25 three times a day, before eating.

Schleich's Mixture for Anesthesia. Lathrop (*Univ. of Pa. Med. Mag.*, Vol. XI., No. 5) reports 150 cases in which he used these mixtures with satisfaction. He believes that they are as safe as ether (the sheet anchor of safety during the past); and although he admits that some cases are troublesome under their influence, he has not found them to be so frequent. He points out that many, who have tried them, have discontinued their use without a sufficient trial, and have pronounced them dangerous from a lack of experience. The mixtures used by him were:

- | | | |
|-------------------------|-------------------------------|-------------------------------------|
| No. 1.—Chloroform,..... | $1\frac{1}{2}$ $\frac{3}{4}$ | } Boiling point, 38° C., or 100° F. |
| Sulphuric ether,..... | 6 $\frac{3}{4}$ | |
| Petroleum ether,..... | $\frac{1}{2}$ $\frac{3}{4}$ | |
| No. 2.—Chloroform,..... | $1\frac{1}{2}$ $\frac{3}{4}$ | } Boiling point, 40° C., or 104° F. |
| Sulphuric ether,..... | 5 $\frac{3}{4}$ | |
| Petroleum ether,..... | $\frac{1}{2}$ $\frac{3}{4}$ | |
| No. 3.—Chloroform,..... | 1 $\frac{3}{4}$ | } Boiling point, 42° C., or 107° F. |
| Sulphuric ether,..... | 2 $\frac{3}{4}$ $\frac{3}{4}$ | |
| Petroleum ether,..... | $\frac{1}{2}$ $\frac{3}{4}$ | |

They were administered by an Allis inhaler, a few drachms being poured upon it, and when the patient was under the influence, a towel was placed over it, and a few drops of the mixture added from time to time. No. 3 was most efficient in operations around the head and neck. He agreed with the majority of other authors in regard to the rapid going under and coming out, boiling point of mixture in relation to body temperature, etc.

Diphtheria Antitoxin. Warbenweiler (*Corr.-Bl. für Schw. Aerzte*, No. 17, 1898) sums up his experience in the following words: "I who was a Saul have become a Paul, and even if I should have an unfavorable case, my new-found faith would not be shaken." He gives a short account of 51 cases treated with antitoxin, and 38 prophylactic injections, observed during the fall and winter of 1897 to 1898. His patients all recovered. The epidemic appears to have been a severe one, whole families being attacked by the disease, but the treatment was so uniformly successful that the community (a small Swiss village) began to doubt that it really was diphtheria, because no one died. Fortunately, the writer says, their faith in science and in their doctor was somewhat restored by the fatal issue of two cases, in one of which the treatment was not used at all, and in the other only after the patient was beyond all hope. All but one of the children treated with a prophylactic injection escaped infection.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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"Typhoid and Typhoidal Complications" (De quelques Observations Bacteriologiques Faites a la Clinique Medicale de l'Universite de Liege). Masius and Nolf (*Annales de la Soc. Med.-Chirurg. de Liège*, Janvier, 1899) report two interesting typhoid complications. (1) Typhoid fever in a child, *aet.* 10 years, complicated by general typhoidal infection, the bacillus typhosus having been demonstrated as present in the blood during life. The symptoms presented were: Temperature oscillating between 39.8°C. and 40.4°C., which appeared to be influenced by quinin; rapid pulse, reaching 140; profound prostration; delirium; great tympany; subsultus tendinum; carphologia. There was a point of osteomyelitis situated on the lower end of the right femur. This was associated with tumefaction of the periosteum, which was very painful on pressure. Blood taken from the bend at the elbow, and inoculated upon bouillon and gelatin developed about 30 colonies of the typhoid bacillus in each cubic centimeter.

The time of dissemination of the bacillus was inferred by the sudden rise in temperature and pulse rate, and by the fact that the diazo-reaction, which had begun to disappear, suddenly became marked and remained so until death. The day of the disease on which the dissemination occurred is not given. The patient died; and the authors believe that all cases of typhoidal septicemia are fatal. (2) The second case is one of abscess of the kidney, developing in the beginning of the third week of typhoidal attack. The patient entered the hospital October 16th, and on October 20th there was a sudden increase of albumin in the urine, followed by a temperature oscillating between 37° and 39°C. On October 29th there was intestinal hemorrhage, which came very near being fatal, followed by sub-normal temperature. Up to November 9th the urine, which had been clear, became suddenly cloudy, and showed on sedimentation a large amount of pus without casts or blood cells, but containing slender agglutinated bacilli. Necrotic portions or renal tubules and glomeruli appeared in the urine. The inferior extremity of the right kidney was palpable, and after what was believed to have been the rupture of an abscess the organ diminished in size. The patient recovered. (3) The same authors report a case of malarial infection associated with or followed by tuberculosis; and (4) also a case of bacteriuria in which the only organism found was apparently the bacillus subtilis. The authors believe that the bacillus subtilis entered the circulation by the alimentary canal, was excreted by the kidney and developed in the albuminous urine. The patient had had symptoms of fibrous kidney for an uncertain length of time. Under proper treatment, the albumin disappeared from the urine, and with the disappearance of the albumin the bacillus was also lost sight of.

Parasite of Syphilis. In *La Presse Med. Belge*, Dec. 11, 1898, is an abstract of the report made by M. Winkler and presented to the Society of Biology, of Hamburg, Oct. 11, 1898. The technic of the examination consists in removing any crust which covers the initial lesion, drying its surface and gently compressing the tissue so as to cause a small amount of fluid to be expressed from the surrounding tissue. This fluid is spread upon a cover-glass and fixed by alcohol. The cover is then stained with thionin or toluidin blue, and decolorized in formalin. Unfortunately, the strength of the stain and decolorizing mixture is not given. Another process is to stain with polychromatic methylene blue, decolorize by means of iodized alcohol, or Unna's ether glycerin mixture. The bodies described consist of small spherical corpuscles, clearly limited, and surrounded by faint areola, sometimes divided in two by very fine lines. In this communication the size of the corpuscles is not given. They are found in the chancre, syphilitic papules, condylomata, syphilitic glands, and gummata. Exactly what the bodies described may be, is not as yet determined. Unna is stated to have accepted the deductions of Winkler, and considers the finding of the bodies of diagnostic value.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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Distribution of Tuberculosis in Ireland. (*Brit. Med. Jour.*, Mar. 18, 1899.) In a paper before the Royal Academy of Medicine of Ireland, Dr. P. Letters showed that tuberculous disease throughout Ireland—*tabes mesenterica* and tuberculous meningitis more so than phthisis—was regulated almost exclusively by aggregation of population. Small towns and villages bred tuberculosis largely. He controverted all theories referring the prevalence of Irish tuberculosis to meteorological or climatic causes, or to the proportionate amount of bog and barren mountain land, to surface elevation, or to geological formation. These did not operate as influential factors, or their effects could not be measured by death-rates recorded over large areas. In the counties, death-rates per million living from (1) *tabes mesenterica* and tuberculous meningitis combined, and (2) from phthisis, corresponded so closely with the several degrees of urbanization as to leave no reasonable doubt of a causal relationship. This line of argument led to the conclusion that tuberculosis, as found in Ireland, was essentially a town-bred and village-bred disease, exclusively rural localities showing next to no mortality from *tabes mesenterica* and tuberculous meningitis, and greatly reduced death-rate from phthisis. The most tuberculous region in Ireland extended along the eastern and south-eastern seaboard, and was mapped out by the counties of Antrim, Down, Dublin, Wexford, and Waterford. The least tuberculous was found in a compact region in the northwest, comprising the five contiguous counties of Donegal, Leitrim, Cavan, Fermanagh, and Longford. These two regions contained respectively a high and a low percentage of urban population. A table giving the percentage of inhabitants of towns over 500 to the total population in each of the 32 counties showed that, where the town-dwelling population was high so also was tuberculosis, and *vice versa*.

Frequency of Injurious Meteorological Phenomena. (*Monthly Weather Rev.*, Feb., 1899.) The cause and probable continuance of any unusual frequency of storms or frosts cannot at present be definitely stated. If the records of these phenomena were precise and definite, and extended over many years, for any given locality, we could calculate the probability that two or more would accidentally occur within a short period of time. Such computations have been made for other places, and have shown that there is no reason to think that a rare combination of years of disastrous meteorological phenomena will recur more than two or three times in a

century. In our inability to analyze the exceedingly complex interaction of the ocean, the land and the atmosphere we ordinarily say that, so far as we are able to see, the occurrence of unusual combinations of weather is governed by the laws of chance. By this we simply mean that the laws of chance will tell us how many such combinations will occur in a century just as well as would the natural laws that we know must govern them. But the physical laws will give us the years and dates of the occurrence, whereas the mathematical laws of chance simply give us the statistical frequency of occurrence. Both these laws, however, will agree in showing that unusual combinations of events in one year will not be followed by similar combinations several times in rapid succession.

SURGERY.

UNDER THE CHARGE OF

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The Treatment of Appendicitis. Broca (*Gaz. des Hop.*, Jan. 17, 1899), in a discussion before the Surgical Society of Paris, says that in cases where a general peritonitis is diagnosed, operation should be undertaken as soon as possible. Although the patient usually dies, he has had 4 recoveries in 31 such cases that he has operated upon. In regard to immediate operation in all cases he says that that was his original plan, but gradually he found that if the patient was not threatened with a general peritonitis immediately, and if there was no signs of a localized collection of pus, medical treatment, with careful observation of symptoms and operation as soon as local or general symptoms indicated its necessity was preferable. Of course great care and skill are necessary in observing the symptoms, for operation must not be delayed after the symptoms indicate the necessity, or the patient's chances of recovery are greatly decreased. During such medical treatment, the fever will fall, while the inflammatory thickening will decrease. The formation of abscesses in unusual locations is very difficult to diagnose, yet the symptomatology of this condition is so well known that few should now be unable to detect the abscess as soon as it forms. The author believes it bad surgery to seek for the appendix and remove it at all costs in every case, or to break up adhesions in order to remove it at once. If it presents, it should of course be removed. The adhesions are the safety of the patient. The incision and evacuation of the abscess saves the patient's life. He does not, however, believe that in all cases nature takes care of the appendix. Where there are symptoms that indicate it, the appendix should be removed at a subsequent operation.

The secondary operations prevent relapses, and the approximation of the abdominal incision as obtained in such operations prevents hernia. These operations are as benign as they are necessary, but he would not counsel operation in all cases where there have been attacks of appendicitis. If there is no tumor and no tenderness or pressure he would wait for their indications before operating. He prefers the direct incision, and reserves the dissecting up of the peritoneum in the iliac fossa for cases where the abscess is situated in the true pelvis.

The Results of Open Operation in the Treatment of Recent Fracture of the Patella. Charles Phelps (*The New York Med. Jour.*, Dec. 17, 1898) finds that his 118 operations show that open operation is not only free from danger when it is properly performed, but it also secures the best functional results. The author believes that osseous union can be obtained, and is obtained, in every case where the patient is free from specific taint and the open operation is performed with strict aseptic results. This belief has been strengthened by *post-mortem* in some of his own cases months after operation, and by observations made in the *post-mortem* room and on the dissecting table, in cases where the buried silver wire suture has been found *in situ*, proving the previous operation. In those cases where the open operation has been done, the function of the joint is completely restored; extension is complete as well as flexion. A further advantage of operative treatment is the early period at which passive motion can be commenced. The time before the patient can commence to use the limb is much shorter. Where the fragments are coapted by silver wire, the author usually removes all retentive apparatus, begins flexion and permits the patient to walk with the aid of a cane on the twenty-eighth day. The cane is discarded a few days later. The author's method comprises free lateral incision, ablution of the joint by irrigation, and, after the removal of the interposed fibrous tissues, coaptation of the fragments by silver wire, and closure of the joint cavity by soft sutures through its fibrous covering. He has found that this operation is convenient, and produces perfect results. The after treatment is important. Movement of the joint should be begun early, and the case kept under observation until flexion has been carried beyond 90°. Lateral movement of the patella should begin at the end of the third week; if neglected, the bone may become fixed to the femoral condyles and be liable to refracture in the effort at flexion. In both lateral movements and flexion firm support should be given to the upper and lower borders of the bone.

The Use of Orthoform in Calomel Injections.—Dr. Daulos advises (*Klin. therap. Woch.*) the employment of orthoform in injections of calomel. He uses the following formula:

Calomel,	0.05
Orthoform,	0.08
Ol. vaselini,	1.c.c.

This combination renders the injection painless. The orthoform can be increased in the dose, as it is not poisonous.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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On the Importance of Removing Adenoid Vegetations from the Fossae of Rosenmuller. Gibson (*Intercolonial Med. Jour., of Australia*, Vol. IV., No. 2, 1899) states that the presence of these growths in the above-mentioned locality has been denied by competent authority. His own personal observation confirms his earlier views as to their frequent occurrence in the fossæ. A small bunch of adenoid growth in this locality interferes far more with Eustachian patency than more extended growth in the vault or elsewhere. Unilateral deafness may be often traced to this cause. Bridges of tissue between the tubal prominence and the posterior pharyngeal wall have been seen and removed. The author's mode of operation is to tie the palate forward with feeder tubing, and, under cocaineization, using No. 4 laryngeal mirror to guide Löwenberg's forceps, with patient in sitting posture, to locate and remove the offending structure. Improvement of hearing has been prompt and satisfactory in every instance.

Intra-Tracheal Injections of Carbonate of Creosote (Des Injections Intratrachiales de Carbonate de Creosote). Bayer (*Rev. Hebdom. de Laryngol., etc.*, No. 9, 1899) prefers for these injections carbonate of guaiacol, obtained by the combination of CO₂ with chemically pure beechwood creosote. The preparation, if pure, is a white liquid of a syrupy consistence at ordinary temperature, which becomes quite fluid when gently heated on a water bath. The odor is mild, and feebly suggests that of creosote. It produces no reactionary inflammation in mucous membranes. It is composed of 90 to 92 per cent. of creosote to 8 to 10 per cent. of carbonic acid. With the syringe used for laryngeal injection, he introduces through the larynx into the trachea $\frac{1}{2}$ to $1\frac{1}{2}$ c.c. of the liquid, which should be gently heated. The injection causes no irritation, and is well borne by the most sensitive patients, who are told to breathe deeply to facilitate as far as possible its penetration into the bronchi. He has obtained some startling results from even the first injection in combatting the "bad breath" that originates from advanced disease (tubercular, etc.) of the lungs and also in modifying and lessening the secretion.

Physiologic Nasopharyngeal Extract: Its Application in the Treatment of Pulmonary Tuberculosis (De l'Extrait Physiologique Nasopharyngien et de son Application au Traitement de la Tuberculose Pulmonaire). Fauvel (*Gaz. de Hopit.*, No. 4, 1899)—assuming the view that the nasopharyngeal mucosa secretes the principles des-

tined to ward contagion from the respiratory tract, and the fact (which is far from being proved as the editor believes) that "the methodical examination of tubercular patients and questioning as to their antecedents always demonstrates that the tuberculosis first attacks the upper respiratory tract, descending thence by the bronchi to the alveoli"—conceived the idea of injecting into patients with tuberculosis the physiologic extract of the nasopharyngeal mucosa of the kid or lamb. Experiments on animals showed gain in weight and vigor after injection. The same held good in the treatment of man.—(Brindel, *Rev. Hebdom. de Laryngol., etc.*, No. 7, 1899.)

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Congenital Ptosis with Associated Movements of the Superior Eyelid and the Inferior Maxilla. Coppez (*Jour. des Sciences Méd. de Lille*, Jan., 1899) reports his second case of this curious anomaly. The first case was in a young girl, presented to the *Société Belge d'Ophthalmologie*, November, 1897. The second case was in a young man of twenty, who, in a state of repose, exhibited a typical case of ptosis, the right lid falling lower than the left. When, however, the patient moved the lower jaw toward the left, the eyelids raised and the right interpalpebral fissure became actually larger than the left. The same phenomenon appeared when the lower jaw was depressed, as in opening the mouth or in eating. Although this anomaly is rare, Gunn, Sinclair and others have described it. Coppez attempts an explanation, by a consideration of the anatomy and physiology of the innervation of the parts involved.

"Letter" without "Word" Blindness. Hinshelwood (*Lancet*, Jan. 14, 1899) reports five cases which he claims make it quite clear that there is a distinct variety of "letter blindness" in which the individual, though able to read words, cannot read the separate letters of which the words are composed. Recorded cases of this nature are rare. Bramwell, who reported a case, had never heard of another like it. However, the author believes that the rarity is due to their non-recognition, the examiner usually being satisfied if the patient can read words, and not examining for the constituent letters. Hinshelwood has already described a class of cases in which the patient could read letters, but not words. He therefore believes that he has been furnished with full clinical evidence that there is complete interdependence of the visual memories of letters and of words, and this complete functional independence can only be reasonably explained on the assumption that these distinct groups of visual memories are stored and preserved in different but probably contiguous areas of the

cerebral cortex. In other words, he believes there is within one center three distinct areas, occupied respectively with visual memories of numbers, words and letters.

Monocular Diplopia and Polyopia. Ryerson (*Canadian Pract.*, Jan., 1899) says that for purposes of description, cases of monocular diplopia may be divided into three classes: (1) Those dependent upon errors or diseases of the refractive media; (2) those caused by diseases or injuries of ciliary body or iris; (3) those dependent upon disorders of the central nervous system or of the nervous apparatus of the eye. (1) Of the first class, refractive errors and diseases of the lens and cornea, astigmatism, more especially irregular astigmatism, are important causes. Opacities of and facets on the cornea similarly cause diplopia. Growths and connective tissue bands in the vitreous and segmentation of the lens are other causes. He had a patient with segmentation of the lens, who could see five moons with one eye. Traumatic or congenital dislocation of the lens is always attended by monocular diplopia. (2) Blows upon the eye, resulting in partial rupture of the zonula of Zinn or partial paralysis of some portion of the ciliary muscle, causing irregular contraction, also produce diplopia. Other causes are trauma of the iris with peripheral detachment (iridodialysis), or following badly performed operations, or synechia after iritis. Persistent pupillary membrane does not cause diplopia, "probably because the mind has unconsciously been trained to ignore the double image by long usage." (3) Of the cases dependent upon neurotic disturbances or cerebral lesions, the author reports two of considerable interest, and urges that ophthalmic writers pay more attention to this class of cases, as but scant mention is made in the majority of text-books upon ophthalmology.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Tuberculosis of the Bladder. McGrath (*N. Y. Med. Jour.*, Jan. 21, 1899) reports a case of tuberculosis of the bladder in the male, cured in six weeks by a suprabubic cystotomy with daily irrigation thereafter until the wound healed spontaneously. The mucous membrane of the bladder had been studded with tubercles, and several small ulcers were

present at the base. The cystoscope, he says, is not as useful in this disease as might be expected. Its use, in the first place, causes great pain in tubercular cystitis, and then the urine in these cases is cloudy and bloody, and although the bladder is well washed out beforehand the bleeding is apt to continue and obscure the view. In women the urethra may be dilated and the bladder examined with a finger. It is better to operate early, when a diagnosis has been made, than wait until micturition has become incessant and the kidneys involved by the tubercular process. The treatment of the ulcers at the time of operation varies with the operator. Some use the curette, others the Paquelin cautery, and the application of iodoform has its advocates. The general health should be looked after and the lungs examined, though a tuberculous lesion here or elsewhere does not contraindicate the operation, excepting, of course, in advanced cases of pulmonary tuberculosis, etc.

Gonorrhea and its Complications. Waterhouse (*The Practitioner*, March, 1899) says he has learned to rely on the presence of gonococci in a suspicious discharge only when the cocci are found in groups *within* the pus cells. Otherwise, he questions the presence of gonococci; and confirms his views by the fact that gonococci cannot be stained by Gram's method, while the pyogenic cocci can. The mistake is not as likely to be made in the acute form of gonorrhea, when the micrococci are numerous, as in the chronic forms, when the gonococci are few and mixed with other micrococci. Writing of epididymitis, he says: "When the pain is intense, tincture of aconite will be found invaluable; three minims of the tincture at once and one minim every half-hour until the pain ceases or the heart is affected. Tartar emetic may be employed in the same cases, but I have found it acts more beneficially in prostatitis than in epididymitis. The patient while taking these drugs requires very careful watching. In the rare cases when the pain does not yield to this treatment, leeches applied over the spermatic cord in the inguinal region will certainly cause a cessation of the pain after the abstraction of a half-pint of blood." Gonorrheal rheumatism follows in about three per cent. of all cases of gonorrheal urethritis. Two characteristics of gonorrheal rheumatism are: The attacks tend to lapse into a chronic stage, and the condition is very resistant to treatment. Tonic treatment, strychnin, quinin and iron, in combination especially, exert the best influence, salicylates and iodides are useless.

Colles' Law. Shaw-Mackenzie (*Lancet*, Feb. 25, 1899) claims priority for W. Wallace as regards the law that "the child born of a mother who is without any obvious venereal symptoms will infect the most healthy nurse, whether she suckle it or merely handle or dress it; yet this child is never known to infect its mother, even though she suckle it while it has several ulcers on the lips and tongue" ("Colles' Law"). Shaw-Mackenzie holds that Dr. Wallace wrote in the *Lancet* of 1833-37. The question of priority, however, is of minor importance in comparison with the observations and interpretations of Wallace. Not only does his work throw light upon the nature of immunity in the mother from inoculation experiments, but also upon that of reinfection in exceptional and similar cases.

GYNECOLOGY.

UNDER THE CHARGE OF

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On the Prevention of Sepsis after Laparotomy in Uterine Operations. Crede (*Med. Review*, Feb. 8, 1899) discusses the difficulty in employing the various antiseptic agents in irrigation of the abdominal cavity in sufficient strength to be of service without doing serious injury to the patient, and advocates the embedding of soluble metallic silver, the argentum colloidal in the most septic portions of cavities and wounds. He first employed millet-, or pea-sized masses of the metal, but soon noticed that in this form it was slowly penetrable by fluids, only a small portion of silver being dissolved. After lying from five to eight days in the wound cavity, it became an insoluble metallic silver. To obviate this, he mixed the silver with an equal quantity of sugar of milk and a trace of glycerin. The following operation explains his method of using it. In a case of resection of the transverse colon about 6 inches long, with corresponding portions of the large and small omentum, for exulcerated cancer of the intestine, after fastening the Murphy button and making a Lembert suture over it, he washed the external and internal field of operation with a gentle stream of $\frac{1}{8000}$ citrate of silver solution, then, drying with sponges, dusted the suture line lightly with citrate, and with Lister forceps placed two silver pills in the wound, about 5 or 6 cm. apart, above and below the resected intestine, then closed the abdominal cavity in the usual way. The highest temperature following was 100.8° F. He had never seen any trouble following this prophylactic embedding of the silver. In infectious peritoneal cases—as infection of the gall-bladder and appendix, carcinoma of the peritoneum—the purulent secretion becomes serous in a surprisingly short time under the treatment. Drainage is insured by the use of silver gauze. This colloidal silver is soluble in serum in proportion of $\frac{1}{25}$ and remains in solution in albuminous fluids in spite of the salts they contain. If the pure silver solution anywhere comes in contact with pathogenic cocci, lactate of silver is formed, and exercises its antiseptic property. Of 16 cases operated upon, 15 were discharged as cured. One died five and one-half weeks after the operation from acute tuberculosis of the lungs. Catgut and silk are also prepared by being placed in a solution of lactate of silver $\frac{1}{100}$, in which the catgut remains for one week; it is then removed, placed in a large glass vessel, covered with glass and exposed to the brightest possible light. Lactate of silver is reduced to metallic silver, the fibers become brownish-black, then washed in water until the water comes away clear, placed in a large glass vessel and covered with a double layer

of muslin. After 2 or 3 days' drying it is straightened out with carefully washed hands, cut in 12-inch lengths, and tied in bundles. It is kept protected and before used placed for fifteen minutes to an hour in alcohol. Catgut is thus sterilized. Silk is kept in a solution for 14 days and should be placed in alcohol before it is used.

Post-Operative Insanities and Undetected Tendencies to Mental Disease. Hurd, of Baltimore, Md. (*Amer. Jour. Obstet.*, March, 1899), says post-operative insanity is a complex affair, comprising symptoms which may differ in cause, manifestation, course and termination. There would be little excuse for the use of the term were it not for the existence of infectious processes accompanied by delirium or prolonged depression. Septic infection excluded, in a case destitute of any tendency to insanity, there is no reason to think that the operation *per se* produces mental disease, or that the insanity bears a causative relation to it. There are disturbing factors in a surgical operation which may obtain to produce an insanity; but the latter must be considered post-operative in point of sequence, rather than of causation. Prolonged use of anesthetics has produced excitement, delirium, mental confusion, often prolonged alienation, without any operation whatever. Instances are not uncommon where, following an operation, excitement has followed the local application of iodoform, instillation of atropin or administration of salicylate of sodium, and, notwithstanding the surgical operation, the symptoms of insanity subsided upon the withdrawal of the intoxicating agent. Mental symptoms following an operation may be clearly ascribable to shock, loss of blood, excessive exhaustion, long-continued vomiting from anesthetic, or absence of food, owing to anorexia. There may be poison in the blood and interference with proper cerebration from defective action of the kidneys, due entirely to the withdrawal of water by the mouth, lest it may excite vomiting after the operation, or the anesthetic may cause a transitory nephritis with accompanying loss of kidney function. Removal of the ovaries may occasion premature climacteric insanity in the form of melancholia, with delusions or depression and apprehension, and lowering the vitality which accompanies this functional disorder, or more rarely we may have a prolonged attack of maniacal excitement. In a similar manner we may precipitate senility or rapidly increasing dementia by the removal of the thyroid glands. Occasionally a slight operation, involving no greater amount of pain, discomfort, prolonged anesthesia or mental worry, has resulted in the development of decided mental symptoms. The explanation of such development is that the operation has been done in neurotic patients to relieve symptoms which are clearly nervous in character. The physician who carefully studies his patient before subjecting her to operation will be slow to operate for the relief of pain. Mental and physical pain are frequently developed in connection with various forms of nervous prostration, and relief is not obtained in these cases through operation. Scarcely a week passes that application is not made for the admission of patients to the gynecologic department of Johns Hopkins Hospital for uterine disease, where observation discloses the symptoms to be nervous in

character. Where mental disease has developed subsequent to the operation, it will often be found that the patient had a strong hereditary tendency to insanity derived from an insane, intemperate or neurotic ancestry.

OBSTETRICS.

UNDER THE CHARGE OF

EDWARD A. AYERS, M.D.,

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ASSISTED BY

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Eclampsia with Special Reference to the Value of Normal Saline Solution. Brown (*Richmond Jour. of Practice*, Jan., 1899) reports a case of eclampsia treated in the usual way by nearly all general remedies used in this condition, including bleeding, without result. Saline injections, hot, into the rectum, were employed and kept up for a period of 36 hours with a marked and happy effect noticed at once. Recovery followed.

Care and Repair of the Female Perineum. Larkins (*Jour. Amer. Med. Assoc.*, Feb. 11, 1899) reviews the well-known causes of lacerations during labor, and quotes Goodell's method of hooking up and pulling forward the sphincter ani by passing two fingers into the rectum during the perineal stage of delivery, and its advantages. He then advocates dilating the sphincter ani as for rectal operations, and claims marked results in the way of relaxing the perineum and thus preventing lacerations. The author does not believe in immediate repair of pelvic floor injuries, but advocates a delay of 6 to 10 weeks when, he argues, the tissues will be over their bruising and in a better condition to unite.

Dangerous Thinning and Elongation of the Lower Uterine Segment—Including Three Cases of Rupture. Dickinson (*Amer. Gyn. and Obstet. Jour.*, March, 1899) reports 6 cases with 8 illustrations. Case 1 was a breech, and was extracted without difficulty. A transverse sulcus was felt in the uterine wall above the level of the umbilicus by abdominal palpation. Through the vagina, high up in the uterus, a well-defined constriction was prominent 12 to 13 inches from the vulva, by actual measurement after delivery. Case 2 was one of hydrocephalus, with extreme thinning and rupture of the uterus into the bladder 3 inches above the external os. Case 3. High retraction ring from elongation of the vaginal walls. Twins—second child transverse; retraction ring was at the navel; thinning was entirely of the vagina. Case 4. Over-distended vagina, causing prominence above pubes, with rent in posterior fornix. Prominence was thought to be overdistended bladder:

Catheter proved it was not. Case 5. Rupture of uterus, with very long injury. Subsequent easy labor. Occipito posterior, forceps applied for two hours and a half by two physicians, with no result. Tarnier forceps were applied, and extraction was simple. A rent in the posterior wall of uterus and vagina, admitting the hand to the peritoneal cavity, was found. Was four months in bed with fever. Became pregnant again. Thick, solid scar found adherent to sacrum. Delivered small child easily at term. Scar then examined and found to extend to fundus. Case 6. Retraction ring below navel. Version possible in arched dorsal posture.

Some Causes of Maternal Dystocia. Cutts (*Northwest. Lancet*, Feb. 1, 1899) says: Some common factors in producing dystocia are: First, obliquity of plane of superior strait of pelvis to axis of the body; second, lordosis of lumbar vertebrae and more especially the undue prominence of the last lumbar vertebra; third, condition of the pubes, as obliquity of the plane of the pubes to the plane of the superior strait of the pelvis, length of the pubes and sub-pubic ligament, and thickness of the pubes. Reports two cases illustrating some of the above causes.

The Combined Wendelenburg-Walcher Posture in Obstetric Operating. Dickinson (*Amer. Jour. of Obstet.*, Dec., 1899) illustrates his article with 23 excellent drawings. A combination of the two postures enables one to obtain results impossible with either alone. The position is readily obtained by the use of a common kitchen chair, the rungs between the rear legs being removed. The chair is inverted, making an inclined plane, and the buttocks are made to project beyond the edge of the seat, the patient's legs spreading widely apart outside of the chair legs, and she is prevented from slipping by a sheet slung over her shoulders and attached to the chair. The direction of the canal formed by vagina and cervix is more direct and nearly level, and the true conjugate is enlarged to the utmost by the Walcher posture. The position is compared with the other positions in common use; the angle of the inlet with the horizon is about 60° and the increase of the true conjugate about 1 cm. Thus, high forceps version, or other intra-uterine manipulation is greatly facilitated, as the objections to the Walcher posture, that the axis of the inlet is nearly vertical and thus awkward, is entirely overcome, while its advantages are retained. Some useful hints as to how and how not to apply the sheet sling are very aptly shown by illustrations. The angle of the plane of the inlet with the horizon as produced by various postures is also well depicted.

A Case of Multiple Pregnancy. Drennan (*Amer. Jour. of Obstet.*, March, 1899) reports a case of triplets in a woman 25 years of age. Five months' gestation, labor brought on by a fall. First child healthy and gasped; second and third fetuses had been dead some time. Two placenta, one small, with two cords, shriveled and evidently detached from the uterine wall for some time, the other placenta was of good size and condition, and had to be removed from uterus. The fall the patient sustained evidently affected the placenta supplying the two fetuses, causing the premature labor and sacrificing the other child. All the children were males.

INTERNATIONAL MEDICAL MAGAZINE.

A Monthly Journal of Medical and Surgical Science.

MAY, 1899.

Edited by BOARDMAN REED, M.D.

PUBLISHED MONTHLY BY E. B. TREAT & CO., 241-243 WEST 23D STREET, NEW YORK.

Taking as a text the sudden death during the past year of six prominent physicians of the United States, including Pepper, Hamilton, Larrabee, Owen, Rohe and Etheridge, Dr. I. N. Love, editor of the *Medical*

**Sudden Deaths
among Eminent
Physicians.**

Mirror, preaches a timely sermon on the need of more attention to diet and personal hygiene in the medical profession. He alleges that all the above-named men died suddenly, and forty years before their time. He insists also that "every one of them died as a result of atheromatous degeneration from preventable causes," the causes having been overwork, irregular eating, and other violations of well-understood hygienic laws. Granting the truth of the foregoing premises, there seems to be some warrant for the following jocose conclusion by Dr. Love:

"The old saw, that every man is either a physician or a fool at forty, is true; but the trouble with the members of our profession is that at forty the most of us are both physicians and fools."

In recent public utterances Hunter McGuire, of Richmond, and Whittaker, of Cincinnati, have advised in effect that in the latter half of life, especially when gout or arterio-sclerosis threatens, we should take in sail and do less work; that we should eat very sparingly of meat, make a very free use of milk, vegetables and fruits, and especially take plenty of exercise. When either of the above diseases has become established, we should wholly avoid meat and coffee, and, Whittaker says, abstain from alcohol altogether. McGuire, who has cured himself of gout by dieting mainly, drinks no wine or beer, but finds that a little whiskey does not hurt him. These may be considered trite and well-worn truths by some, but multitudes of doctors disregard them, not only in advising their patients, but also in regulating their own way of living, which ought to be equally important to them.

Prof. Potain, of Paris, also has been giving some good advice for the old fellows. In a recent lecture, he discussed atheroma of the arteries in a

most interesting and practical vein. He held that, while the prognosis of this disease is always serious, it is curable in the beginning. By way of treatment he recommended especially iodid of sodium in doses of about five to ten grains, insisting that these moderate doses are better tolerated, and generally quite as effective as larger ones. After three weeks of this medicine he would substitute Dioscoride's granules of arsenic. These two drugs he would then have administered in alternation and apparently for long periods. He spoke favorably also of quinquina as a remedy for the same affection.

**The Treatment of
Atheroma.**

As regards the hygienic precautions desirable for elderly men, and for others whose arteries are older than their years, Potain is in practical accord on most points with our American teachers above quoted. He advised a moderate exercise of all the functions as beneficial, but warned emphatically against all excesses, adding: "You will then recommend your patients to avoid grand dinners, as well as much drinking, and also intellectual labor"—meaning doubtless mental strain. After further cautioning against violent emotions and the pursuit of pleasures which belong to the young only, Potain summed up with the aphorism that "The way to escape the accidents of atheroma is to recommend moderation always, excitement never."

Advice of this kind should be taken to heart by physicians who, whether from the lapse of years or from the excessive strain and anxieties of their lives, find their breath getting a little shorter and their arteries growing longer, as shown by the crinkly tortuosities of their temporals and other superficially located vessels. If they will heed such significant warnings in time, and slacken their pace before it is too late, they will be spared the longer to their families and friends.

Atheroma or arterio-sclerosis and gout are nearly akin, the latter being a frequent cause of the former. At a recent meeting of the Harveian Society of London, Dr. Mouillot, of Harrowgate, read a paper entitled "Modern Views on Gout in Relation to Treatment," and this always interesting subject was ably discussed by a number of leading clinicians. Both the paper and the discussion on it

**A. Notable Discus-
sion on Gout.**

we find reported quite fully in the *Medical Press and Circular* of March 29th. Mouillot considered it sufficiently evident that in gout there is a loss of the balance between production and excretion and that we may assume a relative inadequacy on the part of the kidneys to eliminate all the uric acid formed. He did not, however, assent to the new doctrine that uric acid is produced as well as excreted by the kidneys. As both the supposed antecedents of uric acid, urea and glycocin, are made in the liver, he held it to be probable that their conjugation takes place there also. The recent investigations of Chalmers Watson, showing the presence of uric acid in the blood of birds, contrary to Luff's negative results in this respect, and

the experiments of Minkowski on geese, were considered by him as pointing strongly to the hepatic origin of uric acid.

Mouillot further expressed the belief that the proximate cause of the gouty state lies in a defective metabolism of proteids due to a functional disease of the liver or intestinal glands. In the way of treatment he favored colchicum and the natural alkaline waters.

Bezley Thorne, in opening the discussion, laid great stress upon the role of gastro-duodenal catarrh in the etiology of gout, through the fermentative changes and pancreatico-hepatic obstruction secondarily set up. He gave an account of his own personal experience in fighting for many years a strong inherited tendency to uric acid excess. Attacks of migraine increasing in frequency up to two or three times a week, and two accesses of what would now be called appendicitis, marked the worst period of his malady and indicated the extent and variety of the systemic infection. After following Haig in avoiding meat altogether for an entire year, he finally adopted a diabetic diet, foreswore saline laxatives and took to drinking two pints of water daily between meals. This has proved completely successful in restoring him to health. He had treated the digestive organs meanwhile with bismuth and soda, and found it necessary to continue these during the succeeding seven years in order to prevent relapses.

Considering the clinical history of his case as reported by himself, and the dietetic and medicinal treatment found effective in curing it, it would seem likely that gastro-intestinal derangement, involving apparently excessive fermentation and some intestinal catarrh, must have been the primary and predominant feature in it, the uric acid excess being a result, thus further confirming Mouillot's view as to the etiology of the gouty state.

Dr. Luff, who was present and participated in the discussion, opposed the employment of salicylates in gout as unnecessary, and in many cases harmful. He believed in the efficacy of the alkalies, though he did not think they dissolved gouty deposits.

Mr. William Armstrong advocated allowing some butcher's meat as necessary and especially helpful for the purpose of stimulating the excretion of uric acid. He insisted emphatically that red meats should not be partaken of at the same meal with milk and carbohydrates. Certain gouty cases could be treated successfully, either according to Haig's plan with an entire exclusion of meat, or in the opposite way by meat and hot water mainly without milk and carbohydrates. The important thing was not to mix the two classes of foods. In summing up this suggestive and instructive discussion, Mouillot expressed gratification over the very general confirmation of his view that the initial difficulty in gout was a digestive one, and hence the inability of gouty patients to digest a variety of foods at the same meal.

The practical lesson to be induced from the above summarized observations of our English confrères, as well as from the similar experiences of

many of us on this side of the ocean, is that a close attention to the digestive organs is the important requirement in the treatment of the gouty state, including a large proportion of the cases of so-called neurasthenia, and also of the gouty forms of arterio-sclerosis; and that the successful management of the primary digestive derangements hinges mainly upon the enforcement of simplicity of the diet and an abundant elimination through the bowels and kidneys. Another extremely important point, not apparently touched upon in the London discussion, is the necessity of moderate and carefully regulated daily exercise, active when the circulatory conditions permit, and otherwise passive in the form of massage and Swedish movements. Another point, which seems to have been missed, is that a frequent and careful study of the urine is helpful in preventing the development and aggravation of gouty conditions. The urine should be examined at not too long intervals, not only for an excess of uric acid and the usual familiar morbid constituents, but also for indicanuria and for an excessive total acidity, one or both of which will nearly always be found under such circumstances.

Among the valuable original papers contributed by our distinguished foreign collaborators, none has been of more scientific interest or practical importance than that of Prof. Carl von Noorden, of Frankfort, Germany, which appears in the present number of the *INTERNATIONAL*. It presents new views concerning the dietetic treatment of the chronic renal diseases, which seem to have been so well fortified by both clinical observations and experimental researches as to compel instant attention and probably a general acceptance.

Von Noorden is one of the most brilliant of the original investigators in a country in which original scientific investigation is more prevalent than anywhere else on the globe, being fostered and directly compensated in many instances by the government. He is also a clinician of large experience.

This remarkable paper deals more especially with the dietetic treatment of chronic contracted kidney. It explodes quite effectually the generally accepted idea that there is something particularly pernicious in the red or dark meats for persons with a tendency to rheumatism or gout, not pertaining to the white meats of poultry and certain animals; and rides rough-shod over the theory that the ingestion of an abundance of milk, water or other bland fluids to flush the kidneys is nearly always one of the proper things in chronic diseases of these organs. He shows that this method has gradually become established in practice without being sanctioned by any high authority, or warranted by any careful clinical or experimental investigations. His own experiments have demonstrated the decided harmfulness of drinking much water, especially in advanced cases of renal sclerosis.

We have quoted and discussed in the preceding editorial articles various opinions as to the diet appropriate to the gouty state and to the prevention and treatment of one of its sequelae—arterio-sclerosis. An equally serious ultimate result in many cases of frank gout, as well as of the obscure gouty state, is chronic interstitial nephritis, and von Noorden's authoritative utterance as to the most suitable diet in this affection comes in most opportunely to round out the consideration of an exceedingly interesting and vitally important group of closely associated subjects.

EDITORIAL MENTION.

"I SAID in my haste, All men are liars," exclaimed the Psalmist. The editor of the *New England Medical Monthly* irreverently suggests that "the Psalmist needn't have apologized, for if he had ever served through a venereal campaign, he would have said it at his leisure and stuck to it ever afterward."

DR. J. D. EMMETT, editor of the *American Gynecologist and Obstetrical Journal*, comes out with a vigorous editorial in the April number of that valuable publication, urging the importance of having in the cabinet at Washington a representative of physicians and the medical interests of the country generally. Upon assuming charge of the INTERNATIONAL MEDICAL MAGAZINE we promised to devote ourselves to assisting first and foremost in the great paramount work of improving and advancing the medical art, rather than to indulge in the fascinations of medical politics. Still, we don't mind saying briefly that we believe the Surgeon-General of the United States should be a cabinet officer with greatly enlarged powers. This is due not only to the dignity of our profession, but is absolutely necessary if the sanitary interests of the nation, including the army and navy, are to be properly safeguarded. There is just one way of effecting this object—physicians in all parts of the country must not only unite in demanding it, but unite in voting accordingly.

Obstetrics, the new journal of midwifery, which began its career in January last, has already won a creditable position in medical journalism. Its editor, Dr. Edward A. Ayers, Professor of Obstetrics at the New York Polyclinic, and a recognized authority in his special field, has consented to take charge of the department of Obstetrics of the INTERNATIONAL MEDICAL MAGAZINE, with the co-operation of Dr. Geo. G. Ward, Jr., of New York. Dr. Ayers will also favor our readers from time to time with practical talks on the subject of midwifery.

BOOK-REVIEWS.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX: A WORK OF REFERENCE FOR MEDICAL PRACTITIONERS. Seventeenth Year. New York, E. B. Treat & Co., 241-243 West 23d Street; Chicago, 199 Clark Street, Price, \$3. 1899.

This compact octavo volume of 758 pages is very much more than an "annual" or alphabetic array of condensed abstracts of the new things which have been brought forward in the medical world during the last year. It is by far the most complete and best arranged of all the single volume year-books of medical and surgical progress, and in addition, by using a small but clear and easily read type, the publishers have managed to find room in it for a number of very interesting special articles or short monographs describing our present knowledge of the subjects of most practical importance to both physicians and surgeons.

These include an admirable "Atlas of Bacteria Pathogenic in Man, with Descriptions of their Morphology and Modes of Microscopic Examination," illustrated by seven unusually fine colored plates, by Samuel G. Shattock, F.R.C.S.; "Practical X-Ray Work," by R. Norris Wolfenden, M.D., B.A. Camb., also illustrated; and one on "Climatic Treatment of Consumption," by F. deHavilland Hall, M.D., F.R.C.P. This article is one of great interest and value to physicians in general practice.

Among the excellent articles which introduce the review of progress in other special subjects may be mentioned that on "Advances in Skull Surgery," by Dr. Seneca D. Powell, of New York, and that on the "Surgery of the Spinal Cord," by William Thorburn, F.R.C.S., both thoroughly up to date and freely illustrated; also the very interesting and instructive chapters on Electro-Therapeutics, by Prof. A. D. Rockwell, of New York, and the graphically illustrated articles on "Skin Diseases," by T. Colcott Fox, M.B., of London. W. Soltau Fenwick, M.D., F.R.C.P., contributes an able and very valuable account of "Diseases of the Stomach," giving especial prominence to an intelligible description of many of the newer methods of treatment. Altogether, this work constitutes a most admirable hand-book of the newer things both in diagnosis and treatment, and one which busy practitioners must find indispensable.

The mechanical execution is creditable to the publishers, and the binding seems strong enough to bear even the constant usage which such a book must be expected to endure.

LA RADIOGRAPHIE ET LA RADIOSCOPIE CLINIQUES. Par le Dr. Regnier, chef du Laboratoire de radiographe a l'hôpital de la Charité. 1 vol. in-16 carré de 100 pages, avec 11 figures, cartonné. (*Actualités Médicales.*) 1 fr. 50. Paris: Librairie J.-B. Baillière et Fils.

This little book contains much valuable information for those who desire to acquire a knowledge of the clinical application of this new and accurate method of diagnosis.

Like all those, however, who prefer to employ the static machine for the production of the Roentgen rays, the author is handicapped by the inability of this form of apparatus to produce different qualities of the ray, and, conse-

quently, deals principally with the examination by means of the fluorescent screen. From this standpoint the book is admirable, but it lacks the detail which would make it most useful to the student, while the present achievements by means of the radiograph are apparently ignored, if they are known or understood.

RETINOSCOPY (OR SHADOW-TEST). By James Thorington, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Third edition, revised and enlarged. 43 illustrations, twelve of which are colored. Philadelphia, P. Blakiston's Son & Co. 1899. Price, \$1.

The previous editions of this admirable little volume have been reviewed in this journal, and it only remains to say that the author, encouraged by its remarkable success, has attempted to still better it by adding some new illustrations, and changing some obscure phraseology. We cordially recommend it.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Collected and arranged by a large corps of writers, under the general editorial charge of George M. Gould, M.D. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899.

This volume is fully up to the standard of its predecessors. Doctors Alfred Stengel and D. L. Edsall have ably taken up and completed the important work in the field of General Medicine which was laid down by Prof. William Pepper at his untimely death. Each of the main departments into which the book is divided is introduced by an admirable summary of the most important advances and developments made during the preceding year. These are brief but comprehensive. They are a decided convenience to the busy physicians who have not time even to read the whole of such an excellent compendium as the volume itself offers. The various phases of the progress of our medical art are in the main accurately and fairly summarized. In some instances the editors have taken the liberty of accepting the results of certain investigations or clinical experiences as conclusive, while other reports which are even more striking are given little prominence; but probably they have their own reasons for taking the reports of some men *cum grano salis*. Judgment is always fallible, and the best of us have our predilections and prejudices; but for the most part the editors of this very full and complete year-book have been eminently fair and just. Numerous illustrations add much to the interest and clearness of the articles, and in that part of the volume under the head of Dermatology there are some particularly fine colored plates. The letter-press and binding leave nothing to be desired.

AN AMERICAN TEXT-BOOK OF DISEASES OF THE EYE, EAR, NOSE AND THROAT. Edited by G. E. deSchweinitz, A.M., M.D., and B. Alex. Randall, M.A., M.D., Ph.D. Illustrated with 766 engravings, 59 of them in colors. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899. Price, cloth, \$7; one-half morocco, \$8.

This massive volume is the joint work of about sixty prominent American specialists, and it is safe to say that no important thought in the three specialties is omitted. The section on the eye includes 598 pages; that on the ear, 188 pages; and that on the nose and throat 407 pages. Each chapter of the book has been well written (or well edited), as there is a general uniformity of excellence in conciseness, simplicity of language, practicality and thoroughness. Some of the collaborators have taken rather extreme positions on questions of moot; but in the main they have realized that a text-book must give

only safe and generally acknowledged facts, leaving points of theoretic discussion for the larger systems, and monographs. The illustrations are numerous, and though some are old they are selected with good judgment.

Some of the chapters in the section on ophthalmology are rather reminiscent of a recent text-book on ophthalmology, and of Norris and Oliver's system; but this could hardly be otherwise when the same authors are called upon so soon to duplicate their work.

The only really adverse criticism we have to make is upon the publisher's extremely bad taste in producing such a cumbersome and unwieldy volume, combining specialties that have very little correlation. Books upon ophthalmology should be published separately; but those upon the ear, nose and throat may be combined with very good reason. Despite the editors' mild *apologia*, we are inclined to think the combination was made for commercial purposes.

A COMPEND OF HUMAN PHYSIOLOGY. Especially Adapted for the Use of Medical Students. By Albert Brubaker, A.M., M.D. Ninth Edition. Revised and Enlarged, with New Illustrations and a Table of Physiologic Contents. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. 1899.

This is one of the best of the compends, and, besides the purpose for which intended, is a decidedly useful volume for physicians generally to have at hand. The chapter on "Foods and Dietetics" is especially good.

A MANUAL OF OPHTHALMIC SURGERY AND MEDICINE. By Walter H. H. Jessop, Ophthalmic Surgeon to St. Bartholomew's Hospital, London. Published by P. Blakiston's Son and Co., Philadelphia. Price, cloth, \$3 net. 1898.

The concise, lucid and comprehensive style of this manual will undoubtedly make it a prime favorite with medical undergraduates, for whom it is written. While not being as useful to the oculist or advanced practitioner as the more complete hand-book of Swanzy, it is written in a less technical and more elementary style, and, hence, is better adapted to the needs of the medical student. In the matter of illustration and typography, it is decidedly in advance of its predecessors.

As is usual with British works on ophthalmology, the sections upon the important subjects of refraction and muscular anomalies are not in full accord with the best American teaching. Again, the expression of such extreme views as the routine administration of a general anesthetic, "preferably chloroform" (p. 117), in the performance of iridectomy, will not likely raise the American student in the esteem of his ophthalmic examiner.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By Charles E. deM. Sajous, M.D., and one hundred associate editors. Illustrated with chromo-lithographs, engravings, and maps. Vol. II. Philadelphia, New York, Chicago, The F. A. Davis Company, Publishers. 1899.

Volume II. of this really great and exhaustive work begins with an excellent article on Bromid of Ethyl and on the Bromides and Bromates, by Archie Stockwell, and ends with a very thorough one on Diphtheria, by W. P. Northrup and David Bovaird. Over six hundred royal octavo pages are thus taken up with the discussion of the diseases and remedies whose names begin with C, and part of those whose names have for their initials B and D. Such an elaborate scheme involves an immense amount of work. When completed, it will constitute probably the most extensive and exhaustive medical encyclopedia ever written. It will be invaluable and indispensable as a work of reference for every medical writer and teacher. Every article

in the present volume gives evidence of much research by one who is a master of the subject. Prof. Adams' account of Cirrhosis of the Liver, and that on Diabetes by Prof. Lepine, of Lyons, are especially excellent. Dilatation of the Heart is very ably considered by Herman Vickers, of Boston—though it is to be regretted that his discussion of the treatment is so condensed, and especially that he could not have devoted more than a dozen lines to the highly important methods by the Nauheim baths and resisted movements and to the graduated walking and climbing exercises advocated by Oertel. The illustrations are numerous and remarkably good, some of those in the article on Cholelithiasis being quite unsurpassed as specimens of the lithographer's art. In fact, the mechanical execution of the volume is in every way particularly praiseworthy.

NOTES ON SURGERY FOR NURSES. By Joseph Bell, M.D., F.R.C.S., Edin. Fifth edition, thoroughly revised. Edinburgh, Oliver and Boyd, Tweedale Court. 1899.

This little book contains much valuable information of an elementary kind, clearly and systematically arranged. Every nurse would be the better for having studied it carefully, and for having it at hand for the purpose of reference.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Clinical Neurology and Mental Diseases in the Northwestern University Medical School (Chicago), etc., and Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Women's Medical College, New York, etc. With 305 Illustrations. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899.

The authors state, in their very short and modest preface, that their book "has been written for medical students and general practitioners." For the benefit of the latter, the authors, it might be said by way of criticism, should have devoted a larger share of the work to the subject of treatment. With regard to most of the diseases, while etiology, symptoms, pathology, etc., have been quite fully considered, the discussion of the treatment is very much condensed, so as to be in some cases little more than a series of terse suggestions. This is especially true of the first part of the work in the Nervous Diseases, by Prof. Church. Prof. Peterson, in the second part, devoted to Mental Diseases, has given a fairly satisfactory account of the therapeutics of nearly every one of the types of insanity, and has ventured upon a pardonable excursion beyond the proper domain of his subject in order to present the ablest, most interesting and most practically helpful discussion of epilepsy which is to be found in any text-book. But this is Peterson's favorite field of effort, one to which he has devoted an extraordinary amount of study and beneficent work.

Having thus frankly criticised some features of the book, we desire to express our appreciation of the intimate and practical acquaintance with his subject which each one of the two distinguished authors manifests. The result is a model text-book for the student, concise, yet clear, forcible and graceful in expression. If practitioners might desire more therapeutic aid in regard to many of the nervous diseases than has been vouchsafed them, it may be truly said, on the other hand, that they will not be able to obtain anywhere so much for their money in the way of scientific description, well illustrated, accurate and thoroughly up to date. And the therapy recommended is almost without exception in thorough accord with the very latest teachings of the best authors. The letter-press, illustrations and binding are all excellent.

CORRESPONDENCE.

SOME PROPOSED RESTRICTIONS OF MARRIAGE.

PHILADELPHIA, February 1, 1899.

To the Editor of the INTERNATIONAL MEDICAL MAGAZINE:

DEAR SIR—Permit me to express the following objections in reference to the bill framed by Dr. A. H. Burr, in his paper on "State Regulation of Marriage for the Prevention of Communicable and Hereditary Diseases," published in the December issue of the *Journal of the American Medical Association*. That the state should take some action to protect the innocent from preventible diseases, as well as to protect society from a progeny of degenerates, is admitted by all sensible persons, but the question of How? is still an open one. In this case, as in all similar ones where the necessity of legislation is involved, we must take into consideration the applicability of a certain law not only to the needs, but the mental state of the community for which the law in question is intended. It does not matter how necessary or wise a law may be, it will remain a dead-letter so long as the people are not able to appreciate it. The act proposed by Dr. Burr is open to the following objections:

1. It would be next to impossible, if not actually cruel, to compel a young girl to submit to a physical examination, which alone can establish a positive diagnosis (of course, I take it for granted that the author includes in his act also the female sex).

2. This act would undoubtedly tend to discourage marriage, which is already in a state of progressive decline.

3. The young men debarred from matrimony by a communicable disease will be tempted to resort to illicit intercourse with the objects of their passionate desires, thus leading to increase of seduction.

4. The unfortunate girl, seduced by her gonorrheic or syphilitic lover, will be deprived of marriage — the only means of preventing her life from being blasted — since he, the lover, could not get a license.

5. The further increase of prostitution would be an inevitable result of the decrease of marriage, thus establishing a vicious circle.

6. The prevalence of specific diseases is so great that too large a portion of the community would be at once affected by such a drastic measure, and its enforcement would be almost impossible.

Moreover, we must bear in mind that all measures similar to those proposed by Dr. Burr are ineffective so long as the social environment favoring the development of certain evils, against which they are directed, remains unchanged. Under social environment, I include prostitution, economic conditions, etc. But if a palliative is all we can at present hope for, would it not be more practical to consider communicable disease which would affect the healthy parent, as well as the progeny, as sufficient ground for divorce? While the physician should endeavor to educate the people to the appreciation of the evil results that will accrue to the offspring if sexual relations,

under such circumstances, are kept up. Education is always a more potent factor in civilization than legislation.

Hoping to invite further discussion of the matter, I remain,

Respectfully yours,

A. ROBIN, M.D.

PRACTICAL NOTES.

Some of the untoward Effects of Mercurial Injections. H. T. Klotz has observed pulmonary emboli to follow the intramuscular injection of insoluble preparations of mercury. Of 100 patients subjected to this form of treatment, 7 suffered from emboli as a result of the injection.

Elevation of Temperature in Eclampsia. Gmeiner finds an elevation of temperature, when the attacks are frequent and occur in rapid succession. The fever is intermittent in character. On the other hand, if the patient has no more than six attacks, and is conscious, the temperature remains normal. This relation between the temperature and severity of attack is of great prognostic significance, since there is always a proportional relation between the toxicity of the blood, frequency of attacks and temperature elevation.

The Treatment of Bronchial Asthma. Prof. Von. Noorden considers atropin as a curative agent in this affection. He begins with a daily dose of 0.5 mg. internally, increasing it every 2 or 3 days by 0.5 mg., until 4 mg. are taken daily. Then the dose is gradually diminished. The treatment is thus kept up for 4 to 6 weeks, and repeated after the lapse of half a year, when both the duration and dose are diminished. The results obtained by him were in some cases remarkable. It is, of course, needless to say that the patients should be watched, although as a rule they bear large doses of atropin very well.

Estimating Water in Milk, Butter, Oils, etc. A. Wroblewski describes a simple and effective means for estimating the water present in milk, fat, butter, etc. He cuts long, narrow strips of Swedish filter-paper, and rolls them up into loose cylinders. From five to ten of these are then closely packed into a beaker; after desiccation for 6 to 8 hours, at a temperature of 100° to 105°C, 10 or 20 cc. of milk are carefully dropped from a pipette all over the edges of the cylinders, until the latter are saturated, and avoiding leaving any surplus of liquid at the bottom of the beaker. This latter is then placed in the drying chamber, dried from 6 to 8 hours at 100° to 105°C, and then weighed. The difference in weight represents the water originally present in the milk. With fats the same process is carried out; when solid, weighed quantities are placed on the ends of the cylinders, and the whole gently warmed until the paper has absorbed all the melted fat. The further procedure is then the same as with milk.—*Journal of Pharmacy.*

MEDICAL NEWS AND MISCELLANY.

The Question of Homeopathy in Russia. In view of the proposed modification of the legislation as to homeopathy, Prof. Manasein read before the St. Petersburg Medico-Chirurgical Society a paper on the homeopathic treatment of skin and venereal diseases, in which he related several instances in which patients under homeopathic treatment came to him when the disease had progressed already to an extent which placed the patient beyond recovery. Other members present corroborated the author's statements by their own experience of a similar nature.

Rupture of the Heart. Dr. Neboluborn reports in the *Dnewnik Obstestwa Vratchy*, of Kasan, Russia, an interesting case of spontaneous rupture of the heart. The deceased was 60 years old, an alcoholic, and, during his last years, suffered from shortness of breath. He was found dead on a chair one morning, and an autopsy revealed a tear in the left ventricle 2 cm. long, the edges being irregular and corrugated. A microscopic examination disclosed fatty degeneration of the heart, acute pericarditis and atheromatous degeneration of the aorta.

A Woman with a Penis. A remarkable instance of this malformation was revealed by Dr. Heygebayer, of Warshama, Russia. A Jewish woman, 27 years old, and recently delivered of a strong boy, applied for a position as wet nurse, and was examined by Dr. H. She was found to possess all the attributes of a well-built woman. Her sexual organs, including clitoris, were perfectly normal. One cm. below the post fourchette a pendulous body resembling in its structure and appearance the male penis, and of the size of the little finger, was found. At the end of the glans, where the meatus is normally situated in man, there was a slight depression. On manipulation, the organ became erect, and the woman experienced a pleasurable sensation. She refused to have it removed.—*Vratch.*

A Case of Generalized Vaccinia. Dr. D'Espinegeuf reported a case of a girl 11 months old, who, having been vaccinated, suffered from a general pustular eruption which appeared on the eighth day after vaccination. Four pustules appeared on the mucous membrane of the mouth. There was no eczema. Constitutional disturbance was slight. Temperature slightly elevated and normal on the eleventh day. On the nineteenth day the pustules dried up, and patient recovered.

Infection through Ritual Circumcision. Prof. Neumann demonstrated, before the Society of Physicians in Vienna, an infant who was infected by tuberculosis at the site of the circumcision.

PRESCRIPTIONS BY NOTED THERAPEUTISTS.

ANTISEPSIS, INTESTINAL.

R Alpha-naphthol,..... 4
 Phenacetin,..... 1-2
 M. ft. pulv. div. in parta eq. No. v.
 S. One powder every three to four
 hours.
 Or :

R Alpha-naphthol,..... 2
 Olei ricini,..... 30
 Olei menthae piper,. . . gtt. i
 M. S. To be taken in two doses at an
 interval of one hour.—MAXIMOVITSCH.

ANTISEPTIC POWDER.

R Hydrarg. chlor. corros., 0.0012
 Acid. boric,..... 28.34
 Acid. tannic,..... 0 60
 Sacch. lact.,..... 56.63
 M. S. For external use.—PICK.

ASCITES.

R Mass. hydrarg.,
 Pulv. digital,
 Pulv. scillae,..... aa gr. xii
 M. ft. pil. No. xii. S. One three times
 a day.—NIEMEYER.

ASTHMA.

R Potas. iodidi,..... 3 iii
 Extr. belladonnae, fl.,. f 3 i
 Extr. lobeliae, fl.,.... f 3 ii
 Extr. grindeliae, fl.,... f 3 iv
 Glycerini,
 Aq. destillatae,..... aa f 3 iss
 M. S Teaspoonful every two, three
 or four hours, as necessary.—BARTHO-
 LOW.

ASTHMA.

R Extr. stramon.,..... 0.02
 Extr. liquor,..... 0.15
 Kali iodid.,. 0.2
 Ethyl. chlor..... gtt. x
 M. S. Take three times daily.—SID-
 NEY MARTIN.

FOR MERCURIAL STOMATITIS.

R Magn. carbon.,
 Risom. iridis,
 Talc,
 Sapon. medic.,..... aa 5.0
 Ol. menth. pip.,..... gtt. x
 Muc. acaciae q. s. ft. massa.
 Sig. Use as a tooth soap.—HELM-

KAMPFF.

FOR CORNS.

R Liq. kali caust.,
 Tr. iodii,..... aa 5 grm.
 Glycerini,..... 20 c.c.
 Aquae dest.,..... 40 c.c.
 S. Apply morning and night.—
 Medicinsky Wjestnik.

FOR PRURITUS OF THE SCROTUM.

R Hyd. chlor. Corr.,..... 0.05
 Alcoholi,
 Aq. chamomil.,..... aa 25 grms.
 Chloroform,..... gtt. v
 Aq. lauroceras,..... 100 c.c.
 S. Use as a lotion.

FOR INFLUENZA.

R Quin. salicyl.,..... 0.2
 Phenacetin,..... 0.15
 Camphor,..... 0.02
 M. ft. pulv. no. i.
 S. One every 4 hours.—BACCELLI.

FOR URTICARIA.

R Aq. amygdal. amar, ... 5 c.c.
 Chloral hydrat.,..... 0.5 gm.
 Cocain muriat.,..... 1.0
 Aquae destil., ad..... 50 c.c.

M. S. Use externally.—*Journal de
 Médecine de Paris.*

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[NO. 6.

LECTURE.

*A CASE OF TRAUMATIC EFFUSION OF THE HIP JOINT.*¹

BY CHARLES GREENE CUMSTON, M.D.,

Assistant Professor of Surgical Pathology in the Faculty of Medicine of
Tufts College, Boston.

THE case that I wish to present to you to-day, and discuss the differential diagnosis and treatment, is a rather obscure one, and may be mistaken for a number of acute affections of the hip joint, and it is worth our while to enter into the subject quite fully.

The patient is a young man of twenty-one years. His parents are both living and in apparently good health. The patient tells us that he has never had any serious illness other than scarlet fever when a small boy. Four weeks ago, while driving an express cart, he was thrown out, hitting on the side of the curbstone, but he does not remember upon which side he fell; after the accident he was able to get up at once, and was only troubled by a little pain in the left hip joint; but on the following days the pain increased considerably, so much so that the patient was obliged to limp.

I saw the man five days after the accident, and made the following notes: The lungs and the heart revealed no sign of any lesion by auscultation and the result of the examination of the urine was negative. When the patient was placed in a horizontal position, the pelvis did not lie horizontally, and it was found that the left half was about three centimeters lower than the right. When we examined the upper and external aspect of the femur, the first thing that we noticed was that the large trochanter on the left side was not so prominent as on the right. The left leg appeared to be somewhat lengthened as compared with the right, and still this lengthening was only apparent, because it was due to the oblique position of the pelvis, and this was demonstrated by a careful measurement taken from the anterior superior spine of the pelvis to the

¹ A clinical lecture delivered at the Tremont Dispensary.

internal malleolus, and instead of a lengthening we found a shortening of about one centimeter and a half on the left side.

As to the movements that can be made with the hip joint, we found that flexion was restricted, abduction was almost entirely lost, as was also inward rotation, but outward rotation was perfectly free; the greater trochanter was found to lie in the Roser-Nelaton line. Over the entire aspect of the joint a slight tumefaction was noticed, and by palpation a distinct fluctuation could be elicited.

An examination made four days after this showed that the pelvis was still in an oblique position, so that the left half was fully two centimeters lower than the right. Measurement showed that the left leg was still about a centimeter and a half shorter than the right. As to the movements obtained by the hip joint, it was found that abduction was almost completely lost, inward rotation was rather limited, while outward rotation was quite free; flexion could be executed almost completely. We ascertained for a certainty that the femur was in forced abduction, because every attempt to abduct the leg while it was kept in a parallel position with the right limb, produced a simultaneous movement of the pelvis, but there was no abduction in the hip joint. This position in abduction of the femur in the femoral joint also explained the low position of the left half of the pelvis, because, on account of the abduction of the limb, a shortening of the left leg was naturally produced, and to counteract this shortening of the left leg the patient would lower the pelvis of the corresponding side. The shortening of the leg was only an apparent one, and this was due to the abduction of the limb, because on the normal side a shortening of one centimeter could be produced by abduction of the leg; and, what is more, abduction of the left leg in the femoral joint is absolutely an impossibility, because such movements of the leg will only produce a displacement of the pelvis. The absence of any projection of the trochanter outwardly can be explained by the abduction, because abduction of the sound leg also diminished the projection of the trochanter. The tumefaction which I mentioned as being present over the anterior aspect of the hip joint and fluctuation could be still made out.

Now in the treatment of this case the limb was put on a posterior splint and a moderate amount of extension was applied. This bandage was allowed to remain on four weeks, during which time the posterior dressings were once changed and re-applied, and during the time that the patient was in bed wearing the splint the health was in every way excellent, and at no time was there any rise in temperature. At the end of four weeks the bandage was removed, passive motion was begun and the patient was told to make a few active movements of the limb as well, and in eight days he was allowed to leave his bed. Other than the stiffness due to the immobilization of the joint, walking was very satisfactory, and of the restricted movements which we found when we first saw the patient, none

now remain. Abduction is nearly complete, and the pelvis was normal in position, while inward rotation was nearly normal.

This case requires that we should make a good differential diagnosis, as the hip joint is, as you know, a favorite site for a number of acute affections. As to the history of the case, little can be obtained. The patient says that he fell, and, as may be seen from what he told us at the time, he probably fell on the left side, striking somewhere near the hip joint, perhaps on the greater trochanter. Now, basing the symptoms on the changes in motion, it would appear that the patient was suffering from a contusion of the hip joint, and when seen, six days after the accident, the only diagnosis that I could make was a traumatic effusion in the femoral joint, but I shall reach the diagnosis by exclusion and argue it before you.

When discussing the subject from a differential point of view, fracture of the neck of the femur certainly should be considered in the first place, but we should discriminate between an ordinary transverse fracture and an impacted fracture of the neck of the femur. The most important symptoms of transverse fracture of the neck of the femur are outward rotation in its fullest extent and the shortening of the limb. In some rare cases the leg has been found in inward rotation, especially when, removing the patient to his home or the hospital, the friends in so doing have rotated the leg inwardly, or the patient may perhaps himself have done it. The position of the trochanter is also changed, and will be either dislocated upward and backward, the degree of dislocation being in direct relation to the amount of shortening and outward rotation of the leg, and it will also be found several centimeters above the Roser-Nelaton line.

Pain is very acute in fracture of the neck of the femur and the functional disturbances are always marked, active movements of the limb being impossible. A transverse fracture of the neck of the femur can therefore be immediately excluded in the present case, as the patient was able to get up immediately after the operation, and walked about, a thing that he would never have been able to do had he sustained a fracture; and, what is more, in his case no evidence of crepitation could be elicited, and outward rotation was absent. Of the symptoms, however, which characterized the case, there were many which were so much like those produced by impacted fracture of the femoral neck, that I was only able to exclude this traumatism after a repeated and very careful examination.

The essential symptoms of impacted fracture of the neck of the femur are the same as those met with in transverse fracture; viz., a shortening of the leg, with outward rotation. The outward rotation of the limb is a necessary consequence of fracture, because, as soon as the femur ceases to be fixed in the acetabulum by the condyle which is connected with the large mass of tissues that are united to its external surface along its longitudinal axis, the limb is naturally made to rotate outwardly from the simple effect of gravity.

Outward rotation may in some cases be entirely lacking, and in general its degree will depend upon a larger or smaller amount of wedging in of the posterior surfaces of the fracture. The trochanter will be found to move if we attempt to produce movements of rotation, using the neck of the femur in the acetabulum as a center, while if the fracture is a complete transverse one, the trochanter will be found to turn on its proper longitudinal axis, and the patient himself will endeavor to keep the foot in a rotated position.

In infrequent cases the limb may be straight, or even an inward rotation may occur when an impacted fracture of the neck of the femur has taken place.

We will now consider the diagnostic features presented by our patient. There was a shortening of the left leg, abduction was considerable, inward rotation was somewhat restricted, while outward rotation was perfectly free. Shortening would speak in favor of impacted fracture of the neck of the femur, but the limited amount of restriction of inward rotation, which almost without exception may be said never to be present in a case of fracture, and still more from the fact that the patient, after having sustained a fracture, has walked about, decidedly go to prove that no fracture was present in our patient.

Although, as I have already said, there have been cases recorded where patients have been able to get up and walk after fracture of the femur has taken place, the projection of the trochanter which, in the case of fracture is explained by the fact that there is an inward dislocation of the trochanter, was due in the case before us to the abduction which was present. Now a traumatism that would have been able to produce a fracture certainly is to be found in the history of our patient; but, taking everything into consideration, and especially the youth of our patient, the facts speak against fracture, because this lesion, when occurring in the neck of the femur, is more usually met with in old people. In them the bone has undergone a certain amount of senile change and has become porous, and consequently its power of resistance is very greatly diminished. As to the tumefaction which we found in the region of the hip joint, it neither speaks in favor of nor against the presence of a fracture, and Lossen has said that if fracture is not produced by a fall, a tumefaction of the hip will be looked for in vain, because the effusion of blood is generally very slight and is enclosed in the capsule. Now if we sum up the result of the differential diagnosis, we can surely exclude an impacted fracture of the neck of the femur as being the cause of the shortening of the limb in our patient, and as being a hindrance to some of the movements of rotation of the limb.

We should also take into consideration the question of a traumatic dislocation of the articulation of the femur, and this would be a forward dislocation, and in infrequent cases we would get an outward rotation

when there is an iliac dislocation. But, in point of fact, traumatic dislocations are extremely infrequent; and, as you can readily understand, quite an amount of force will be necessary to roll the condyle out of the deep cavity of the acetabulum and to lacerate and tear the strong fibrous capsule along with the other ligaments present around the joint; and we must assume that a dislocation can only take place if the movements of flexion, abduction and adduction, which are physiologically possible, have been greatly exaggerated.

When the ligamentum teres has been rent, the condyle is lifted out of the acetabulum, and then usually finds a resting place in the neighborhood of this cavity, due to some secondary movement of the limb. The forces which will produce dislocation are always indirect, such as a fall on the heel, or a blow on the trochanter; or the bent knee may, in certain cases, drive the head of the bone out of the acetabulum; but in by far the larger number of instances it is a violent and sudden exaggeration of an otherwise physiologic movement of the limb that produces this accident. Now, against the possibility of a traumatic dislocation being present in our patient, we can say that the direct force which acted on the femoral joint would not produce this. The force had a direct effect on the trochanter, a lever effect on the condyle did not take place; and, what is still more, all anomalies in the position of the limb which are characteristic of anterior or posterior dislocation of the femur are wanting. The best evidence that an affection other than a traumatic dislocation at the hip joint is present in our case, will be found in the fact that there is such a considerable degree of mobility in the hip joint, a thing which would never be found if there were a fresh traumatic dislocation.

Considering the differential diagnosis, we should next take up the question of tuberculous coxitis. Tuberculosis of the joints very frequently develops after a traumatism, but the clinical course of tubercular coxitis is so characteristic that it is very difficult to make a mistake when this affection is present. Its course is usually exceedingly chronic, and we may divide it into the four following stages: First, we have the initial stage; second, the first part of the stage of efflorescence, with some change in the position of the limb, such as flexion, abduction and outward rotation, with an increased inclination of the pelvis, along with an apparent or true lengthening of the limb; third, we have the second stage of florescence, with adduction, inward rotation and flexion of the femoral joint, with apparent or true shortening of the leg; and, fourth, we have the ultimate stage of coxitis, which will end either in a spontaneous recovery, ankylosis, cure by surgical operation, or death due to a generalization of the tuberculosis.

The only stages of tubercular coxitis which we must consider in regard to our case are the first and second; and, while discussing these, I will at once mention the points that speak against tubercular coxitis. Our

patient was perfectly well and entirely free from any joint trouble up to the time of the accident, and there is no history of tuberculosis in his family. The boy met with an injury of the hip joint, and right afterwards the functional disturbances already related made their appearance. Before the accident occurred the patient had no pain, nor did he give any history of becoming easily tired when walking. Up to the time of the accident the gait was perfectly normal. He had never limped. One or both of these conditions would have certainly soon appeared if tubercular coxitis were present. We consequently have not a symptom that would indicate that the patient had had any sign of a commencing coxitis in the hip joint before the accident. The symptoms of the two stages of florescence of tubercular coxitis resemble in a general way those presented by our patient, viz., abduction, flexion, and outward rotation of the limb, along with a shortening of the left leg and an inclination of the pelvis on the same side; nevertheless, it is most evident that in the short time of a week, which elapsed between the time of the accident and the time he came under my care, a tubercular coxitis with all these functional disturbances could not have developed, even if there was a primary focus of the disease in the neck or in the head of the femur previously to the time of the injury. It would appear to me that, on the contrary, the chronic course of a tubercular coxitis, with all its characteristic symptoms, would be decidedly against the possibility of this disease being present in our patient.

I would briefly mention the fact that we may have an abscess by congestion following the ilio-psoas muscle after a tuberculous spondylitis; but in this affection we would have a flexion of the limb on account of the contract of the ilio-psoas muscle due to the inflammation present, but the hip joint would be free from pain, and if the patient were etherized it would be found that the seat of the disturbances in the mobility as well as the flexion of the femur is not situated in the hip joint. Now from the history of the patient nothing would justify us in assuming that there is any tubercular trouble in the joint, and we can consequently safely exclude this disease.

As to hysteric coxitis, or, in other words, the neuralgia of the hip joint, I may say that nervous affections of the joint are more particularly met with in females, and we sometimes get them in perfectly healthy subjects. The most frequent seat of the affection is the hip. The commencement is an acute one; traumatism, colds or emotions of any description are more often the occasional causes. The femur is slightly flexed, and is rotated slightly inwardly, so that the pelvis is a little raised up on the diseased side, and consequently the foot appears to be somewhat shortened. A characteristic symptom is the evident one of pain in this disease, such as increased sensibility on pressure, as well as an intense hyperalgesia of the skin covering the joint. If you give ether to these patients, the functional disturbances and the contraction will usually immediately disappear.

In the patient of to-day's clinic there is no pain when we press upon the joint, and all doubts as to the probability of hysteria in this case are removed if we can prove, as we have, that the objective changes, viz., shortening of the limb, the rotated position and the fluctuating tumor, are present. Consequently hysteric coxitis can be excluded, because we have not a single characteristic symptom of it in the present case.

Now there is another disease of the hip joint which we must consider, because it has many symptoms in common with the case before us—I refer to coxa vara. A typical coxa vara has a chronic course and is never an acute pathologic process, and the majority of cases will be found in young adults varying in age between twelve and twenty years, which develop without any definite cause, or occasionally after traumatism and pain in the region of the hip. Now if these patients are subjected to any effort the pain will usually become more pronounced, and it has also been noted that during cloudy or rainy weather the pain is increased. . Occasionally pain will be wanting, and the only thing that the patients will remark is that they get tired more easily, and cannot do any amount of work. On the other hand, we will meet with cases where there is an exceptional amount of pain. Whether pain is present or not, a gradually increasing limping gait will indicate that the disease is present. The pain only lasts as long as the bone is subject to changes in its shape. The most important symptoms of coxa vara are adduction and outward rotation, with a high position of the trochanter. Now in the present case the acute development of the affection, absence of adduction of the leg and the entirely free outward rotation speak against the possibility of a coxa vara.

Arthritis deformans begins very gradually, and produces pain in the hip when the patient walks, and there is always a certain amount of stiffness in the joint. As its name indicates, this disease is due to a deformity of the bone and the cartilage, more especially of the neck and head of the femur, due partly to a hyperplastic and partly to a degenerative process in the bone. If the latter predominates, a very considerable atrophy of the bone will result. The immobility of the hip joint will decrease more and more in consequence of the atrophy, and very often destructive dislocations and sub-dislocations are produced, which cause a shortening of the leg and a high position of the trochanter. If, on the other hand, hyperplastic processes are predominating, functional disturbances of the femoral joint will result. Arthritis deformans is a disease of middle life and old age, and in the present case we are dealing with a young subject; and, what is more, the sudden appearance of the functional disturbances in connection with the traumatism speak decidedly against the possibility of this disease in the present case. We can also immediately exclude synovitis serosa, which occurs during the course of acute infectious diseases, such as the exanthemata and gonorrheal inflammations of the joints. The latter inflammatory process usually goes on to suppuration and usually results from

an infection by the organisms that are circulating in the blood. I only mention this latter point in order to complete the question of differential diagnosis, for in the patient of this morning the history does not present any reason why any one of the diseases mentioned should be considered as the probable factor for the effusion occurring in the hip joint. Now, having discussed the affections which may occur in the hip joint, I will consider more clearly the diagnosis of traumatic effusion of the hip joint; and, first of all, let us once more go over the history of our patient. He fell while getting on to his cart, most likely hitting on the trochanter, and he then sustained a contusion of the left femoral joint, and thereupon an effusion took place.

By contusion we mean an injury sustained by the tissues if they are subjected to a direct force. In by far the greater number of cases contusions are produced by a direct blow with the most varying forms of solid bodies, by the falling of a heavy weight against some part of the body simply, or by the falling of the body against a resisting surface. We must also consider the extent and the depth of the injury produced by the contusion, and here the shape and the size of the acting force, as well as the direction of its movement in relation to the axis of the body or the part on which the force acts, must be looked into. The larger the force of the bodies causing the contusion, the larger naturally will be the contusion. The form of the body causing the injury has also an influence on the extent of the contusion, and you will naturally see that a rough surface will be more destructive than a smooth one. The intensity of the effect of the power being the same, the extent of the contusion as regards its depth will depend upon the direction of the movement of the contending bodies in relation to the axis of the part of the body struck. It may be said that in general the force will be transmitted all the more deeply the more vertical the direction of it in relation to the axis of the part struck. The symptoms of a contusion will vary greatly. They differ as regards their intensity and extent with the degree of contusion, and depend as to the functional disturbances produced upon the structure of the organs and the tissues that are injured.

The primary symptoms of a contusion are pain, a solution of continuity of the tissues, effusion of blood and lymph, and, lastly, disturbances in the functions of the parts. The symptom which is the most important, and which is the most characteristic of contusion of the joint, is the effusion of blood and lymph which takes place in consequence of the large amount of injury done to the blood vessels and lymphatics. The extravasations which are present in contusions of the tissues are of two kinds; in by far the larger proportion of all cases of contusion there is a simultaneous injury of the blood vessels and lymphatics which permit of the immediate outpour of blood and lymph.

In the case of our boy, we have a contusion of the hip joint, where

a perceptible injury of the soft parts covering it was absent. The force which in this case was the cause of the contusion appears to have had its axis in the neck of the femur. It is probable that the patient fell on the greater trochanter, and the transmission of the effect of the force appears to have acted by way of the neck of the femur on the acetabulum, and consequently an injury of the synovial membrane lining the capsule of the joint was produced, which caused a considerable effusion, and in consequence of this effusion the functional disturbances resulted.

Forces which act bluntly and of moderate intensity may produce injuries of the synovial membrane without producing any perceptible lesion in the skin covering the joint involved. The natural consequence of the contusion of the synovial membrane is an effusion of blood, which may reach quite a surprising size if the capsule of the joint is a large one. To the effusion of blood an effusion of the synovial fluid will soon be added, due to a serous synovitis.

Serous synovitis is more frequently produced by a contusion of a joint as well as by the effusion of blood into the synovial membrane. These intra-articular effusions may attain a very large size, so much so that in a large and deep-seated joint a swelling may be immediately detected by the sight, or by examination of the parts fluctuation may be elicited. When the joint has been filled to its utmost limit, it will, as a rule, be somewhat flexed, because in this position it is more relaxed, and its capacity is somewhat increased. A joint that has sustained a contusion with a large intra-articular effusion of blood will naturally be impaired in its mobility and will present a certain number of functional disturbances. The course of a contusion of a joint that is not complicated by a fracture is in most cases very favorable, and in a short time a complete recovery will take place. Occasionally slight inflammatory symptoms or a hydrarthrosis may be present for some little time, and in only a very few cases will a suppurating arthritis result.

In our patient, as we have seen, the functional disturbances produced by a simple contusion may be so considerable that the diagnosis may be hesitating between a traumatic effusion and fracture, because the symptoms of each are very similar. A careful examination of the parts will, however, prevent any mistake.

The treatment of traumatic effusions which have produced considerable functional disturbance in the joints, consists chiefly in immobilization, and, after the effusion of blood has become absorbed, passive movements and massage may be commenced. The limbs should be put at rest on a splint for a few weeks, and recovery will be most likely rapidly obtained, as in the patient we have just seen.

ORIGINAL PAPERS.

THE PATHOLOGY OF GALL-STONES.

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of Philadelphia.

The Pathology of Gall-Stones.—Excepting the pain, occasional fever and the exhaustion which follows them, the pressure of gall-stones occasions local disturbances only.

1. *Local Irritation.*—Gall-stones may remain in the gall-bladder long enough to attain to a considerable size without causing any change in the tissues with which they come in contact. Usually, however, distinct signs of inflammation are observed. The inflammation is catarrhal in type, with a muco-purulent exudation which sometimes undergoes calcification and lines or fills the gall-bladder with a mortar-like mushy mass in which cholesterin crystals and precipitated bile pigment may occur. Being of different composition from the gall-stones, this mass forms about them, but does not enter into their structure.

The mucous membrane shows a variety of changes, sometimes being smooth and atrophic with a shining moist surface, at others roughened, ulcerated and eroded and full of more or less marked irregular pouches or diverticula which may contain muco-pus, or, sometimes, gall-stones, which may actually be encapsulated in the diverticula.

The muscular coat of the bladder walls is very frequently found to be in a condition of fatty degeneration which makes it unusually distensible. Sometimes the tissues show calcification. Atrophy of the gall-bladder is rarely seen to follow gall-stone, but in some cases, with stones of moderate size, one finds the organ very much shrunken and highly contracted about the abnormal contents. Carcinoma, which will be mentioned later as a complication of gall-stones, possibly arises from the irritation which they cause. The pressure of the calculi upon the walls of the gall-bladder often brings about ulceration, perforation and the escape of the calculus.

2. *Obstruction.*—The most usual pathologic accident is an obstruction of the biliary ducts caused by the lodgment of a gall-stone. It is easy to imagine the occurrence of this accident, and as it is probably simply an accident, it has no definite cause. Turning in the gall-bladder and escaping through the cystic duct, the gall-stones are usually caught just at the beginning of the duct. There are reasons for supposing that when the stone does not enter very far it may subsequently slip back again into the gall-

bladder. The next most frequent seat of obstruction is the common duct. Much less frequent is obstruction of the hepatic duct.

Only small stones are capable of entering the ducts at all, and only small stones can cause obstruction. Schüppel believes that it is impossible for any stone of greater diameter than 1 cm. to enter or escape from the ducts. Large stones are occasionally passed by the intestine, but probably always through fistulous openings into the duodenum.

When a stone engages in the duct, it seems probable that the chief force which operates upon it to discharge it from the duct is the accumulating bile behind. In the case of the cystic duct, obstruction of which prevents both entrance and exit of bile, this can hardly be a sufficient cause, and as the amount of muscular tissue in the duct is thoroughly inadequate to explain the onward movement, it is probable that position and movement of the body aid in driving out the engaged calculus. Naunyn believes that the stones are driven on by the circular muscular fibers of the ducts, not, as Goodhart and others think, by bile pressure.

The passage of a gall-stone from the gall-bladder into the hepatic duct is not easily explained when the condition of the common duct is normal. Usually there is disease of the common duct in cases of this kind. Murphy found disease of the ductus choledochus in 45 out of 51 cases of stone in the hepatic duct.

The lodgment of a gall-stone gives rise to symptoms mild or severe, according to the seat of obstruction. The most characteristic are pain, from the dilating effect of the retained bile, icterus from absorbed secretion, and catarrhal inflammation of the duct. In some cases the seat of obstruction suppurates. When the stone is long retained cicatricial tissue forms an encapsulation around it consisting of thickened duct tissue. Carcinoma of the gall-ducts is almost invariably associated with engaged gall-stones, but it is impossible to prove that the stone preceded or caused the carcinoma.

(a) *Stone in the Cystic Duct.*—In spite of Schüppel's opinion, that only stones of 1 cm. in diameter can pass the duct, Murphy has seen one $\frac{5}{8}$ inches in diameter lodged in the cystic duct near the formation of the ductus choledochus.

The stone may partly or completely obstruct the duct. In the former case it has a kind of valvular action and may allow bile to flow into the gall-bladder, but prevent its escape, so that there is a continual dilatation of the organ. When, as is usual, the obstruction is complete, no bile enters, but the gall-bladder progressively increases in size from the retention of secretion formed in its walls by the glands there. This fluid is usually clear, watery and colorless, and originates a condition known as *hydrops vesicae*. The degree of distensibility of the gall-bladder is remarkable. It is not at all uncommon to find it the size of a child's head, and there is a case on record in which it contained 15 pints of liquid

(*Durian*). The fluid does not always have this watery quality. It may be viscid or slimy, or may be colloid in character. Where malignant disease is present it may be bloody. In cases with infection there may be empyema of the gall-bladder.

The lodgment of calculi in the cystic duct is not usually followed by jaundice. Considerable distention of the gall-bladder does not usually follow repeated attacks of cystic obstruction, because the local inflammatory reaction produces such indurations and adhesions as interfere with future enlargement. Sometimes one attack will be followed by an inflammatory reaction that will effect pronounced contraction and atrophy of the gall-bladder. In 87 cases of obstruction of the common duct observed by Courvoisier, dilatation of the gall-bladder occurred in only 17.

(*b*) *Stone in the Hepatic Duct*.—Murphy says that stones are formed in the hepatic ducts in only one per cent. of the cases of cholelithiasis examined at necropsy. The stones may be formed in the hepatic duct, or, as is much more frequent, enter it from the cystic duct. The obstruction is the cause of much pain, and causes icterus in about one-half of the cases. Fever seems to occur only when infection is present. Permanent lodgment of calculus is followed by the formation of a pouch or dilatation of the duct in which the stone lies, the bile flowing around it. Clinically, the disease is not well characterized because of its association with disease of the ductus choledochus, and stones in the gall-bladder.

Should the calculus or the cicatricial tissue which surrounds it, or the bile dammed back by it, obstruct the portal circulation by pressure, as is sometimes the case, changes commensurate with the extent of venous obstruction will occur.

(*c*) *Stone in the Ductus Communis Choledochus*.—Of 255 cases of cholelithiasis observed at necropsy at Basle, an obstruction was found in the ductus choledochus in 0.4 per cent. The stones usually originate in the gall-bladder and descend into the cystic, then into the common duct. More rarely they originate in the hepatic duct and descend into the common duct. Occasionally a stone is formed in the common duct and obstructs it.

It is interesting to note the observations of Courvoisier upon 177 cases, in 17 of which the calculus was found at the beginning of the duct, in 19 in its middle, in 20 close to the duodenum, in 41 in the papilla. In 26 of the cases the duct was full of stones. The duodenal end of the canal is smallest, and it will be observed that most of the stones collected here.

Enormous dilatation of the duct may occur after obstruction, a case being recorded by Frerichs in which it was 8 inches long and 5 inches wide.

The dilatation usually affects not only the ductus choledochus, but also the hepatic duct and its radicles. The gall-bladder is not always affected, but sometimes dilates. There is almost always icterus from lymphatic absorption of the bile from the distended vessels. Pain is usually pretty

severe and there may be vomiting. The presence of the stone usually excites catarrhal inflammation of the ducts; rarely there is suppuration. The stone may ultimately escape, or may make its exitus through a fistula, or may remain, producing a chronic cicatrizing mass of tissue about the stone.

3. *Perforation*.—It is not at all unusual for the gall-stones to escape from the gall-bladder and from the ducts in which they are impacted, by ulcerating through the tissues into neighboring viscera or to the surface of the body. From a study of the histories of 1,800 cases of cholelithiasis, studied by Courvoisier, perforation occurred 499 times, as follows:

Fistulous communications between different parts of the biliary system,	8
Perforation of the portal vein,	5
“ into peritoneal cavity,	70
“ “ “ peritoneal pouches,	49
“ retroperitoneal,	3
“ into stomach,	13
“ “ duodenum,	83
“ “ jejunum,	1
“ “ ilium,	1
“ “ colon,	39
“ “ urinary tract,	7
“ “ pleura and lung,	24
“ externally,	196

As Murphy points out in discussing the subject, no collection of statistics can be accurate regarding internal perforations of which many are very probably overlooked. The fistulous communications between different parts of the biliary tract are of little importance from either a pathologic or clinical point of view. The perforation of the portal vein results from ulceration from pressure upon it. Stones have been found projecting into the vein. Thrombosis nearly always occurs.

The perforation of the peritoneum is usually very grave because of the infective processes which follow. Bile from a normal organ might be sterile and do no damage. In cases of gall-stones, however, the gall-bladder is almost invariably the seat of infective processes. Peritonitis with fatal termination is very frequent. It is, of course, impossible to determine how often perforation of the gall-bladder permits of the escape of gall-stones into the abdominal cavity without causing peritonitis. In all probability, however, it is not often, as gall-stones are rarely found in the abdominal cavity at necropsy, and few cases show signs of healed fistula. That they occasionally escape and leave communications with the peritoneum, is shown by a recorded case in which 27 liters of bile were aspirated from the peritoneum in 29 days. The patient had no peritonitis and subsequently recovered.

It can also with difficulty be determined how often gall-stones escape from the gall-bladder or ducts into the intestine, as they are often passed unobserved. Very large stones seem to make this their usual mode of escape, and not infrequently obstruct the intestine. Indeed, Kirrnesson and Rochard have collected 105 cases of obstruction of the bowels caused by gall-stones. That such stones do not escape by passage through the bile ducts seems to follow after 36 autopsies mentioned by Murphy, in only three of which such a route could be demonstrated.

The urinary perforations may enter the pelvis of the kidney, the ureter, or the bladder. Courvoisier collected three cases of fistulous communication with the vagina. The gall-stones may escape through the urethra from the bladder, or, if large, may remain as vesical calculi.

Murphy mentions three ways by which fistulous communications with the thorax can occur. First, abscess of the liver resulting from an infection of the gall-tracts, followed by subphrenic suppuration, which finally perforates through the diaphragm and pleura into the pleural cavity or lung; second, through perforation of the gall-bladder, usually at the fundus, and the formation of an abscess with burrowing of pus into the subphrenic space without involvement of the liver, and the rupture of the subphrenic abscess into the pleura or lung; third, the formation of an abscess into the mediastinum from perforation of the gall-tracts and the subsequent perforation of the pleural cavity or lung. Courvoisier has collected 11 cases and Graham 7 cases of such thoracic fistula. In cases of perforation of the stomach, gall-stones have occasionally been vomited. Gall-stones may also at times find their way from the duodenum into the stomach and be vomited.

External perforation is most frequent, comprising nearly one-half. The opening is usually seen in the right hypochondrium at the margin of the ribs; next in frequency near the umbilicus; third, near the right iliac fossa. There are rare cases of remote perforation, Patheret having seen a case where the perforation occurred in the left flank.

The formation of the fistula may sometimes depend upon the eroding effect of the pressing calculus, but is more usually associated with abscess formation, burrowing of pus, and final opening with purulent discharge and escape of the calculus.

The outcome of fistula formation will vary much with the tissue, and with the infection, thrombosis, etc., that it occasions. It seems possible for stones rapidly to ulcerate through the tissues into the intestine (duodenum) without leaving behind them more than a rapidly cicatrizing wound which may entirely close. The most important result of fistula is probably the loss of bile from the intestine. In cases of external fistula it quite commonly happens that because of obstruction of the common duct, no bile escapes into the intestine, all passing out through the external fistula. Such cases are not necessarily serious.

Probably the most remote effects of the pathology of gall-stones are observed in connection with the heart, which has occasionally shown malignant endocarditis from infection from abscesses due to gall-stones.

4. *Fever*.—The obstruction of the biliary ducts by a calculus is not rarely followed by a febrile attack, somewhat closely resembling malaria, and now usually spoken of as “Charcot’s Intermittent” or “Hepatic Intermittent Fever.” The condition is ushered in by a severe chill, followed by pyrexia amounting to 104°, 105° or even 106° F. Following this, the patient sweats profusely, the temperature declines and an intermission occurs, followed by a repetition of the phenomena. Such a febrile condition may continue for several months, with paroxysms every week or two. A fatal termination is frequent.

It is probably this condition that led older writers to see a marked connection between gall-stones and malaria, and to suppose that malaria predisposed to the formation of gall-stones and the gall-stones to the precipitation of a paroxysm. The condition has nothing in common with malaria; its paroxysms are less regular, and the hematophylla are continually absent from the blood.

Hepatic intermittent fever has all the appearances of a toxic or infectious process. It is not pyemic, for it is not at all constantly associated with suppurations in the ducts. The few cases that recover do so after the expulsion of the calculus, which would indicate that whatever poison is responsible for the affection was retained by the calculus, though the intermittent fever is occasionally seen when the gall-stone is loosely held in the ducts, probably then depending upon more active infection than is usual.

CONCERNING IMMUNITY AND THE USE OF NORMAL NON-IMMUNIZED SERUMS.

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STERNBERG, whose patient and scholarly investigations in serum-therapy have received universal commendation, has stated “that no questions in general biology are more interesting from a practical point of view than those which relate to the susceptibility of certain animals to the pathogenic action of certain species of bacteria and the immunity, natural or acquired, from such pathogenic action which is possessed by other animals.” Concerning natural immunity, he has stated that it seems probable that the germicidal property of freshly-drawn blood serum is *not* due to its alkalinity *per se*, but to the fact that the germicidal constituent is only soluble in an alkalin fluid.

The researches of Vaughn, McClintock and Novy indicate that this germicidal constituent is a nuclein. Kossel, of Berlin, has also demon-

strated that the germicidal constituent of blood serum is a nuclein. "The nuclein is undoubtedly furnished by the polynuclear white corpuscles."

To analyze the force we recognize as life is a task beyond the ability of the biologist or chemist. It is *this* vital force which antagonizes disease and death—explain it as we may! When we attempt to examine this wonderful phenomenon, we arrive at obstacles more impenetrable than the mighty ice cliffs which thwart the efforts of Arctic explorers searching for the "pole." Science without God is built upon the most useless foundation. Man must recognize the teachings of the book which is the foundation of all true learning, and to regard as worthless such teaching is to invite inevitable failure. When we study the subject of natural immunity we are in dangerous proximity to the most sacred secrets of nature and of nature's God.

In the development of serum-therapy the horse has been the animal chosen from which the stores of antitoxin (immunized serum) have been obtained. The fact that horse blood (non-immunized) normal serum is a natural antitoxin has been almost entirely lost sight of by the eager investigators seeking after artificial preparations. Nevertheless, some very distinguished bacteriologists in various portions of the world have become convinced that horse and goat blood normal serums are of positive value in the treatment of tuberculosis and of other wasting diseases. The method of employing normal serums is the same as that adopted with ordinary antitoxins and in about the same doses. Bernheim and others prefer transfusion, which the former thus describes:

"I have satisfied myself by other experiments that the transfusion of blood from one animal to the other is not dangerous. I have, therefore, transfused goat's blood into man. The apparatus which I used consists of two trocars, joined by a rubber tube; the one, rather voluminous, is introduced into the carotid of the goat, the other, capillary, into the cephalic vein of the patient; 100 to 120 grams of blood may be transfused in one minute. The first sittings must not last longer than fifteen to thirty seconds, the subsequent ones more than one minute. I have thus treated two chloro-anemics, who were cured; seven tuberculous of the second, one of the first degree, who may be considered as cured, inasmuch as their general condition is good and the physical symptoms, as well as the bacilli, have disappeared."

In my investigations concerning the employment of normal serums, I have been greatly interested in a paper by Dr. T. M. Prudden on the germicidal action of blood serum. He says:

"The definite proof that a large number of the most important of human diseases are caused by bacteria has made promising glimpses into the domain of prophylaxis and treatment. The nature of the poison by which bacteria produce their effects on the body and the varying reactions of the

¹ See an article by the writer in the *N. Y. Med. Times*, February, 1898.

cells in the presence of these poisons form a series of problems which tax to the utmost the resources of both the chemist and the biologist. The question of immunity from bacterial disease, either natural or acquired, has from the first been a most potent stimulus to speculation and research.

"The various conditions of the body which evidently predispose it to the incursions of disease-producing bacteria, whether acquired by heredity, by exposure, or in any one of many possible ways, suggest most important, and as yet most obscure, fields of inquiry both at the bedside and in the laboratory.

"The application of our new knowledge to clinical observations, old as the science of medicine itself, teaches us that there is in the body some sort of adjustment of forces by which, under ordinary and favoring conditions, the deleterious effects of pathogenic bacteria are neutralized or limited and the organisms themselves disposed of."

In health the normal blood serum can so dispose of them. In disease, the functions are all more or less interrupted and the disease products offer food for the pathogenic bacteria to feed upon and increase. This we can antagonize by the introduction of normal serum to offset the morbid conditions. The condition of an engine in a steamship at sea when out of gear with its lack of harmony threatens disturbance, danger, destruction.

Continuing, Prudden says:

"The very occurrence of self-limiting diseases, such as typhoid fever, acute lobar pneumonia, etc., strongly suggests, if it does not prove, the existence in the body of some sort of bacteria-destroying agency. But a long series of animal experiments has definitely proven that a very considerable number of pathogenic micro-organisms may be introduced into the body to entirely disappear in a short time. To account for the disappearance of pathogenic bacteria in the body, either in the course of an acute infectious disease or as the result of exposures, which we may sustain unharmed, several more or less plausible theories have been evolved.

"First, the well-known theory of phagocytosis. Metschnikoff claims that this destruction of the life of bacteria by being taken into the bodies of certain cells—phagocytes—is the exclusive means which the organism makes use of in resisting the incursions of pathogenic bacteria. An animal whose leucocytes can successfully battle with and eat up a given species of bacteria, according to this theory, enjoys immunity from its deleterious effects."

It may be objected to the foregoing view that the dead bodies of germs are found within these phagocytes, but that they were taken in a living state and deprived of life within the phagocytes is by no means proved.

Prudden maintains that the leucocytes and other lowly organized cells are capable of taking up dead and used up material into their bodies, and that the leucocytes are more or less constantly engaged in transporting and disposing of such material in various parts of the body as a physiologic

process is well known. But the observers of phagocytosis have never demonstrated that the micro-organisms were alive when they were taken in, and unless this can be shown the theory cannot be established.

Nuttall's observations confirm the theory that it is some agent in the fluid constituents of the blood which destroys the germs. Büchner's researches confirm those of Nuttall. He found that the fresh blood serum of certain animals, freed from cells, had the power of rapidly killing various species of bacteria. The degree varies in different animals, Büchner has further shown, by experiments on blood serum by dialysis, that this germicidal power is associated with its albuminoid constituents. From his experiments Prudden concludes that fresh blood serum possesses a marked germicidal power.

These investigations prove that there exists "a natural defence of the organism against bacterial invaders—viz., a healthy condition of the blood. On the other hand, one of the most abundant of the pathogenic bacteria—the staphylococcus pyogenes aureus—appears to be quite invulnerable to this destructive agency. All these things are the result of the vital forces—vitality, life. Still is the whole subject one of Nature's tantalizing and well fortified secrets."¹

And what is this secret of Nature? The blood impoverished, disease is able to enter and to develop. The tone of the blood restored by injections of normal blood or serum, and this treatment continued, not for a day or two, but until the system has received *decided* nourishment, then the strength of the disease is overcome and health reasserts itself. The serum-therapy of the future will be the use of normal (horse or goat) blood serum. Further light on this subject is contributed by a paper in the *Journal of the American Medical Association* of May 14, 1898, by Dr. John Madden, entitled "The Limitations of Serum-Therapy."

The following language is used by him:

"Granted, then, that the antitoxin is produced, it may act in two ways to effect a cure—by making further bacterial growth impossible, or by combining with and neutralizing the toxin as fast as it is produced until the bacteria cease from lack of pabulum to be virile. Indeed, it may be that the cell protoplasm, constantly bathed in the antitoxin serum, is in some unknown manner changed so that the toxin contact is no longer harmful and is eliminated without disease symptoms."

Referring to bacterial diseases, which are confessedly *not* self-limited—tuberculosis, syphilis, leprosy and the like—the statement is made that there is no evidence to show that these diseases produce an antitoxin. Dr. Madden goes on to say:

"Certain animals are partly or wholly immune from particular bacterial diseases. The rat cannot be inoculated with anthrax; the cow takes small-pox lightly, and the horse is immune from tuberculosis. In some instances the blood serum of the immune animal will destroy the

¹ N. Y. Med. Record, January 25, 1890.

bacillus of the disease against which it possesses immunity, as in the case of the serum of the rat against the anthrax bacillus. In view of this fact, the question arises whether the blood serum of an animal already naturally immune can be given *greater* bactericidal powers by injecting into the blood current the toxins of the disease against which it is immune. It can only be said that what evidence we have entirely supports the negative.

"Shall we say that the horse immune against tuberculosis, a non-self-limited disease, will therefore yield a valuable anti-tubercular serum when injected with the toxins of tuberculosis? Certainly this is absurd; yet it is just what has been done during the last two or three years. It certainly involves the height of credulity to believe that the serum of an animal immune against a disease is rendered valuable as a remedial agent for the same disease by injecting it with the *disease-toxin* without producing an antitoxin."

"Referring again to the use of immunized horse serum for the treatment of tuberculosis and the favorable results reported, it is quite probable that all the benefits received by the patients subjected to the treatment were due to the serum itself and not to any added value it possessed by reason of the animal having been inoculated with tubercle poison."

Dr. Madden then quotes the researches of one of the experimenters which I have already published. *Vide* a paper read at the meeting of the American Medical Association, 1896, on "The Use of Normal Horse-Blood Serum"—*Virginia Semi-Monthly Medical Journal*; on "The Use of Normal Goat-Blood Serum"—*New York Medical Times*, January, 1898; *Pediatrics*, February, 1898, etc.

Another valuable paper sustaining the position which we have assumed is by Dr. Luke Fleming, in the *New York Medical Record* of May 14, 1898.

"Different forms of life differ in their needs and choice of soil," says Dr. Fleming. "This is due not to any arbitrary instinct in the germ, but rather to its inherent necessities. The bacillus of typhoid finds in the secretions of the Peyer's glands its only human culture medium. It passes unharmed and harmless through all the secretions of the mouth, esophagus and stomach, down to its favorite spot in the small intestine, where it stops, grows, and propagates a colony. One of the products of this new life is a toxin which is absorbed into the system and causes *symptoms*. A germ disease lasts while the food supply lasts, becoming acute when the germ is active and supply limited, and chronic when the germ is slothful and the supply unlimited."

"The variation in mode of onset is surely due to something in the germ itself. The tubercle bacillus may so invade the lungs as to run an acute course very closely resembling pneumonia. The feature influencing the duration of disease is called individual resistance. It is owing to variations in this resistance that the tubercle bacillus creates an acute

disease in one patient and a chronic in another. The variation in resistance is due undoubtedly to variation in nutrition, a weakened resistance being the result of weakened nutrition, leaving the gateways of the system open through the normal secretions. *The secretions of the body, like the circulating blood, possess bactericidal powers*, but, owing to inherited features, coupled with vicious habits, these powers are in many cases lowered or lost. The duration of a disease caused by such a resistant germ, while depending ultimately on soil limit, is measured best by the individual resistance. A system temporarily off its guard allows a localized invasion; but by the absorption of the toxin, its glandular system is stimulated and again rallies, causing the disease to abort."

This result aborting the disease is due probably to improved hygienic conditions, but the fact stands, nevertheless, that increased individual resistance shortens the duration of this disease. The stronger the normal resistance the shorter the duration of the disease. Dr. Fleming is opposed to the theory that diseases are self-limited by the action of a substance called antitoxin and which is claimed to be the result of the toxin acting upon, or being acted upon, by some blood constituent. It is claimed that this antitoxin is foreign matter in the blood, that *every specific germ* has its own specific antitoxin and that a definite amount of toxin, injected artificially or absorbed naturally, results in the production of a definite amount of antitoxin, which neutralizes the toxin. This seems unreasonable; and the claim of those who believe in normal horse and goat blood serum as a general natural antitoxin is that it requires no assistance from any toxin, but that *normal serum is antagonistic to all toxins*. The chief support of this antitoxic theory comes from the apparent success attending orrhoterapy (serum-therapy). All these questions are easily understood and can be easily answered, if we but assume that the germ lives only while it finds soil to feed upon and while it lives it gives off toxin which is absorbed. This toxin in the blood on its way to be excreted acts accidentally as an irritant, stimulating normal glands. This stimulation enriches the blood in glandular secretions and *the blood serum of disease* thus possesses curative powers!

The pestilence rages in the village only while filth to breed upon is there. The sewage, although darkening at first the limpid stream and forming nasty green pools here and there, is nevertheless destroyed by the natural forces of fishes, sunlight and fresh air. When the sea is reached, the water is again sweet and pure.

So may we believe it to be with the human blood stream in disease; it takes up the toxins and starts with its burdens to its sea, the chambers of the heart. The fever due to increased oxidation is but an index of the effort being made to make the blood stream pure. The skin and kidneys are the human filtering sands. The phagocytes and leucocytes are but the fishes of a microscopic world; and while it may seem to some that this

figure is the result of poetic fancy, Nature through all her works rules in harmony.

Now it is admitted that scarlet fever is a self-limited disease; and, since the toxin is excreted, how is the antitoxin produced?

Dr. Fleming considers that one of the fatal errors in the antitoxin theory is that the *antitoxin* is held to be foreign matter in the blood. The tendency of the blood is to excrete all foreign matter, and the assertion that the antitoxin will remain in the blood from months to years is a standing refutation of the chapter on the blood in every text-book on physiology. If, on the contrary, we assume that the increased antitoxin power of the serum after disease is due to normal secretions in excess, we can easily see how this virtue may last for an indefinite period.

Since the toxins are consumed in the production of the antitoxin, to what are the symptoms of disease due? There is nothing, however, to disprove that this so-called antitoxin serum is not either a concentrated solution of normal resisting fluid or an irritant which acts by stimulating the normal glandular system. The chemistry of these serums is so absolutely dark as to render their use almost empirical. It is a remarkable thing, however, that the antitoxinists attribute this virtue to the *germ* and not to the system protecting itself through its own glandular secretions. We have in thyroid feeding direct evidence that we *can* supply a missing secretion; and since the blood serum is the medium from which all gland secretions are formed, and to which they finally return, why should not an injection of a concentrated solution of it add to the material already in the system and thus increase the probability of cure?

In a paper contributed by Dr. E. H. Hankin in the *Lancet* (August 15, 1891), he wrote:

"The view that *acquired* immunity was due to an alteration of the metabolism of the tissue cells either in general or at the seat of infection (Grawitz, Büchner) is now known as the phagocyte theory with which the name of Metschnikoff will ever be honorably connected. The supposition of Chauveau and others that immunity was caused by the presence of some unknown substance of bacterial origin is now overshadowed by the results obtained by many workers who have actually *found bacteria-killing substances in immune animals* whose nature and origin, however, appear to be very different from what Chauveau's theory might have led us to expect."

In 1888 Nuttall discovered that various bacteria are destroyed when mixed with fresh blood or blood serum, and, further, that this destruction cannot be ascribed to the action of cellular elements, but rather 'to the fluid part of the blood.'

This discovery (which really arose from the German criticism of Metschnikoff's phagocyte theory) was soon followed by the work of Büchner and Wissen, and these observers came to the conclusion that this bactericidal action of the cell-free blood serum is a mighty factor in the conflict between the organism and the microbe. Bouchard confirms this view, saying:

"Immunity, whether natural or acquired, is due to the presence of substances which are formed by the metabolism of the animals rather than by that of the microbe, and which have the power of destroying either the microbe, against which immunity is possessed, or the products on which their pathogenic action depends."

Hankin solves the question as to what is the nature of the substances on which this bactericidal action of blood serum depends. He refers to the statement by Buchner, that the bacteria-killing action of blood serum is due to a remnant of the *vitality* that had been possessed by the blood plasma from which the serum was derived.

His theory (Hankin's) is that the bactericidal action of blood serum is due to the presence of "defensive proteids." The vitality theory of Büchner has been abandoned, and even he admits the importance of defensive proteids and suggests for them the name alexins. Defensive proteids appear to be ferment-like albuminous bodies. Hankin divides them into two classes: First, those occurring naturally in normal animals; and, secondly, those occurring in animals that have artificially been made immune. For these two classes he proposes the names sozins and phylaxins. A sozin is a defensive proteid that occurs naturally in a normal animal. They have been found in all animals yet examined, and appear to act on numerous kinds of microbes or on their products. A "phylaxin" is a defensive proteid, which is only found in an animal that has been artificially made immune against a disease.

Mycso-sozins are defensive proteids occurring in the normal animal which have the power of acting on the various species of microbe. Toxo-sozins are defensive proteids, also occurring in the normal animal having the power of destroying the poisons produced by the various microbes. Mycophylaxins and toxo-phylaxins denote two subclasses of the phylaxin group.

In conclusion, we may state that when first the use of normal serum was proposed in this country only those who were able to furnish the required animals from their own stables could obtain this *normal* serum, unless by exceptional favor. Normal serum was with difficulty recognized as a practical portion of serum-therapy. For the past three years I have labored to bring the matter to the attention of the profession, as worthy of employment in wasting and other diseases. My first paper was read at the meeting of the American Medical Association in 1896, and I have contributed several papers since to our medical journals. I found it difficult to interest any one in preparing the serum, but now abundant supplies can be obtained from Messrs. Parke Davis and Company, who have made all the arrangements necessary to manufacture the non-immunized (normal) horse-blood serum in any quantity required, having added to their laboratories and stables a special department of normal serums. Physicians can now be supplied with these preparations, together with the appliances necessary to carry out this new departure in serum-therapy.

TALKS TO GENERAL PRACTITIONERS.

FUNCTIONAL DISTURBANCES OF THE OCULAR MUSCLES.

BY WALTER L. PYLE, M.D.,

Assistant Surgeon to Wills Eye Hospital, Philadelphia.

Part II. *Tests.*

A PRISM deflects rays of light toward its base, and if such a glass is placed before an eye, the rays of light entering that eye will be so bent from the visual axis that unless the eyes are turned accordingly, double vision (diplopia) will result.

THE STRENGTH OF THE OCULAR MUSCLES

is measured by the degree of prism that they can overcome and still maintain single vision. To test the adductors, prisms are placed, bases out, before one or both eyes, and the patient is instructed to look at a fine flame of light at six meters distance, and the strength of the prisms is increased until two images of the flame are seen, and cannot be further fused. In testing muscular strength and muscular balance, both eyes are tested at once, and it does not matter whether the prism is placed before the right or the left eye, or whether its strength is divided between the two eyes. Healthy muscles will show an adducting force of about 30° ; that is, they can maintain single vision, with 30° of prism-strength, base out, before them. To test abduction, the prisms are placed bases in. The normal abducting power is about 7° . The normal relation of adduction to abduction (about four to one) should be maintained. Deficiency of adducting power renders prolonged convergence in reading very tiresome, and is the source of many asthenopic symptoms. It is not uncommon. For this reason the adduction-test is very important. The supraduction and infraduction need be tested only in cases of hyperphoria. The prisms are placed before the eye bases down and bases up respectively. To overcome a prism base down before one eye, the superior rectus of that eye and the inferior rectus of its fellow are put in action; that is, one eye is turned up and the other turned down, to straighten the visual lines. In overcoming prisms bases out or bases in both eyes are turned out or in simultaneously.

TO TEST FOR HETEROPHORIA,

we place a prism before one eye and a red glass before the other. If the image colored red is on the same side as the red glass, the case is one of homonymous diplopia; that is, the eyes have a tendency at rest to turn inward. If the red image is on the opposite side to the red glass, the case is one of crossed or heteronymous diplopia, that is, the eyes have a tendency to turn outward.

A 6° prism, base up or base down, is placed before one eye and a red glass before the other. Two images of a light at six meters' distance are seen. If the red image is on a vertical line with the other, there is orthophoria; that is, no muscular imbalance exists. If the red glass is before the *left* eye and the red image is above or below the other and to the *left* the case is one of esophoria, and the amount imbalance is measured by the strength of prism held base out before the left eye that will put the red image exactly on a vertical line with the white image. If the red image is to the *right*, the case is one of exophoria, and is measured in the same way.

If diplopia is produced by a prism held base in or out before the right eye, and a red glass is held before the *left* eye, and the two images are in an exact horizontal line, there is no disturbance of the muscular equilibrium in this plane. If, however, the red light is *above* or *below* there is hyperphoria, measurable by the prism held, base up or base down, before the left eye, which brings the two lights on a horizontal line.

THE MADDOX ROD

consists of a small glass rod mounted in a cell which, acting as a strong cylinder, distorts the natural image of a flame at six meters into a streak or line of light. This device may be used instead of the prism and colored glass. The Maddox rod is placed *horizontally* before the *left* eye, and the right eye is unobstructed. The patient sees a natural light and a *vertical* streak of light. If the streak passes through the light, there is orthophoria. If the streak passes to the *left* of the light there is esophoria, measurable by the prism, base out, before the left eye, which will cause the streak to pass through the light. If the streak passes to the *right* of the light, there is exophoria, measurable with prisms bases in. The rod is then turned *vertically*, and the patient sees a light and a *horizontal* streak. If the streak passes above or below the light, there is hyperphoria, measurable with prisms, bases up or bases down, as the case may be.

ROTARY PRISMS AND PHOROMETERS

are instruments designed to facilitate oculo-motor tests; but they are unnecessary. For all practical purposes, accurate tests may be made in the simple manner herein described.

DIAGNOSIS AND TREATMENT OF CHANCROID (SOFT CHANCRE).

BY J. D. THOMAS, M.D.,

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THERE are two varieties of venereal sores—one the soft sore, or soft chancre; the other the true, or hard, or Hunterian chancre. The chancroid is a local sore, producing no constitutional infection; the true chancre is also a local sore, but invariably and inevitably producing systemic infection.

That chaneroid is due to a micro-organism I believe. Ducrey, Welander, Krefting, Unna and others claim to have discovered the microbe, but as pure cultures, up to the present time, have not been made, the matter is necessarily still *sub judice*. But reasoning from analogy, we are logically forced to this conclusion. The chancroid is a venereal sore which is almost typical, and is propagated from a preceding similar sore. The tendency of chaneroid to multiply is *sui generis*, and this is so marked that it stamps it as a different sore from any other with which we are acquainted. It is true that there are occasionally non-chancroidal sores met with that very much resemble chancroid, but they are no more chancroids than is the eruption that sometimes follows the administration of copaiba, scarlatina. I have seen such mistakes made.

The following experience may be interesting: A young man consulted me with regard to a sore which he had upon his penis, following an intercourse had six days before. To my mind, the sore was an undoubted chancroid. Before direct examination, he volunteered the statement that he had had syphilis two years before. In a few days he again visited me, accompanied by a friend who had had intercourse with the same female. The friend also had a chancroid. This latter patient was a non-syphilitic. Neither patient was exposed to any other source of contagion. Here we have a syphilitic and a non-syphilitic acquiring a similar disease from the same woman within a few days of each other.

In a well-developed case the diagnosis is not difficult; but before expressing an opinion the history of the case should be thoroughly gone into. A chancroid lesion makes itself manifest from the third to the fifth day; sometimes as late as the tenth. It is primarily a pustule, but as the pustule has ruptured, as a rule, before the patient presents himself, and as the laity cannot distinguish between a pustule and a vesicle, the diagnosis must not be based upon their statement. The sores are multiple, or soon become so (spontaneous auto-inoculation); they are round, oval or elongated. The elongated sores occur in the furrows about the prepuce or

elsewhere. The edges are well defined and the base secretes freely. If neglected, the skin becomes undermined and breaks down. When the poison enters the mouth of a follicle it may burrow without much surface indication and an ulcer will appear suddenly. Herpes is preceded by itching, and a group of vesicles soon appears—usually simultaneously—the secretion being watery. Chancroids, as a rule, follow each other. Herpes sometimes appears to be an idiosyncrasy, *i.e.*, some suffer from an attack after each coitus. Herpes recovers promptly with mild treatment. An abrasion is single, superficial, and is observed immediately when received. Chancre is of slow growth, not destructive, indurated and accompanied with slight secretion. Herpes, abrasions and chancre are not followed by inflammatory bubo.

As a mixed sore is sometimes met with, this fact should always be borne in mind when expressing an opinion to the patient.

The treatment of chancroid varies; depending upon, when first seen, the *tendency* of the ulcer and the physical condition of the patient. If seen early, it should be thoroughly cauterized. My preference is fuming nitric acid. This is to be preceded by cocain and peroxid of hydrogen; the former to mitigate pain, the latter to cleanse. The acid is applied with a pointed stick. In this way the application is under control, all superfluity is absorbed by the wood, and the medicament is uniformly applied, and not in drops, as with a glass rod. After the specific character of the ulcer is destroyed, my favorite dressing is acetanilid. Bismuth, calomel, boric acid, aristol or any of the non-irritating antiseptics may be used. When the ulcer takes on a healthy character, no further cauterizing is necessary. I have frequently seen healing prevented and the ulcer made larger by continual burning, burning, day after day.

When more than one chancroid exists, all must be cauterized. If some of the ulcers cannot be reached, for example, when under a swollen prepuce, it is useless to cauterize those that are accessible, for they will again become infected. Such cases may frequently be successfully treated by carefully cleansing with peroxid of hydrogen followed by black wash (lotio nigra, U. S. P.). A penis syringe with a moderately long nozzle may be used for this purpose. If the bichlorid solution is used it must not be too strong, for it will set up a dermatitis with erosion of the integument. $\frac{1}{4000}$ is strong enough to begin with. However, if at any time it should be feared that serious destruction of tissue was taking place under the swollen prepuce (inflammatory phimosis), then splitting the prepuce, or circumcision, should be immediately practiced. Although the cut surface will become infected, it is an evil that cannot be avoided. I will here state that of late years I have not been obliged to resort to this measure, the thorough cleansing as above indicated being sufficient.

If the chancroid comes under observation after it has existed for ten days or more, and if it is found that it has a tendency to run a favorable course, cauterization is unnecessary; thorough cleanliness and antiseptics

being sufficient to conduct it to a rapid healing. If unnecessarily cauterized a slough will result, with a serious loss of time to the patient. However, it matters not when the chancre is first seen, if the ulceration is progressive or destructive in its character, the nitric acid should be used.

With regard to the suppurating bubo, again, the treatment must be varied. Some of these patients persist in being ambulant throughout. In such cases I sometimes pass a double thread through the upper limit of the abscess and bring it out at the bottom, thus securing drainage. In addition, the cavity is washed out, along this drain, with a weak solution of bichlorid of mercury or carbolic acid, and recovery takes place without further breaking down of tissue with a minimum of scarring. In the meantime, a pad moistened with the antiseptic solution is worn over the seat of the bubo. When I can induce the patient to permit it, the cavity is laid open freely, washed, curetted, washed again and sutured, with the object of securing primary union, which can sometimes be secured. If failure is the result, then packing with iodoform gauze is practiced.

If the bubo is a virulent one it must be treated on the same lines as the original chancre.

I believe that the removal of the inguinal glands by dissection is bad surgery and is subjecting the patient to a major operation. If the bubo is a simple one, curettment with suturing or draining is efficient. If the bubo is a virulent one, under any treatment the wound assumes the character of a chancre and the dissection would be a barbarism.

At the present day phagedenic or serpiginous chancres are seldom seen. If they should be seen, curetting with continual antiseptic irrigation would be the proper treatment and at the same time tonics should be administered.

GENERAL CONSIDERATION OF MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

BY D. BRADEN KYLE, M.D.,

Clinical Professor of Laryngology and Rhinology in the Jefferson Medical College; Consulting Laryngologist, Rhinologist and Otologist to St.

Agnes' Hospital, Philadelphia, etc.

(Concluded.)

It is a well-known fact that in anemia there is edema, leakage of serum from the kidneys, and in some instances intestinal changes, such as watery diarrhea. In these cases the respiratory membrane will also show a thin, slightly albuminous, watery exudate. This is especially true in children, and is due in a large number of cases to the intestinal irritation or any faulty nutrition.

The shape of the nostril has much to do with the so-called catarrhal diathesis; not infrequently patients will say they have inherited catarrh, when, in fact, they have inherited the family nose, the narrow, slit-like nasal cavity, so straitened that the least congestion of the mucous membrane closes the nose by narrowing the lumen of the nares and lessening the size of the nasal cavities. For, backed up as the mucous membrane is in this locality by bone or cartilage, it can distend in but one direction; that is, toward the lumen of the air passage and away from its resistant background. The free passage of air and perfect drainage are interfered with, thereby causing an accumulation of secretion, which, by its presence and infection, irritates the mucous membrane and produces some form of rhinitis.

Too much importance cannot be attached to nasal breathing and its effect on the mucous membrane. Many cases of disease of the nose and throat necessitate mouth breathing, which, if continued for any length of time, produces a marked effect on the general health. It is also important in children, since obstructed nasal breathing with the continued forced inspiration and snuffing, especially in early life (one to three years), by the drawing down of the facial muscles may draw in the upper jaw and alter the contour of the upper arch. The hard palate, instead of forming the perfect dome, is moulded into a high arch.

The change produced in the blood is well shown in a series of blood counts made by the writer in cases in which there was nasal obstruction, the counts being made before and after the removal of the growths. In every case, before removal, the red corpuscles (the oxygen carriers) were reduced to 3,000,000, and in some instances as low as 1,500,000, with the hemoglobin reduced to 30 or 50 % of normal, and in many cases with slight increase of the white corpuscles. After removal of the obstruction, both hemoglobin and corpuscles gradually increased to the normal. Occupation also causes mouth breathing, as is seen in engineers, car-drivers, train-men, motor-men, and I must add bicycle riders. The tendency in these cases is to keep the mouth slightly open, and in many patients of these classes marked alteration in the mucous membrane of the pharynx and larynx will be found, due to irritation caused by direct inhalation of dust.

It is essential that the lining membrane of open cavities should be soft, moist and pliable. This is especially true of the nasal cavities where the surface is exposed to the drying action of the air. The anatomic arrangement and physiologic function fortunately counteract this latter tendency. The anatomy of the mucous membrane is the same wherever found, with slight variation as to function and layer of epithelial cells. Where the function of the epithelium is protective in character, it is found in several layers; where secretion is essential, there is usually but one layer. Thus on the tongue many layers are found, while in the tubules of the stomach, in the acini of the glands, and in the tubules of the kidney but a single layer exists.

Where protective or propulsive force is needed the epithelial cells are supplied with cilia, as in the bronchi and anterior nares. Epithelial cells possess the faculty of manufacturing from supplied nutriment new chemical compounds, as is seen in the secretion of the salivary glands, the gastric follicles and the pancreas.

Every mucous surface is, then, as it were, a laboratory by which is elaborated material, of which the most constant is mucus. When altered by disease its physiologic product is changed and does not serve its proper function, for it prevents the excretion of an agent for which the organism has no further use. The degree of this perversion of cell activity largely controls the classification of mucous membrane diseases. As cellular function is controlled by nutrition, and as the epithelial layer is dependent upon the sub-epithelial layer for its nutriment, any alteration in these sub-structures, local or constitutional, must necessarily affect the functional activity of the superimposed cells. It must be remembered, then, in treatment of this sensitive, delicate structure, that it is controlled by, and is dependent upon, underlying and associated structures, and that outside of mechanical obstructions, either in the form of growth or foreign bodies, occupation irritation (pneumonokoniosis), trophic and atrophic conditions, the apparent local lesion is a local manifestation of some constitutional or organic abnormality.

The function of the mucous membrane is to secrete mucus, to offer an absorbent surface and to afford a smooth, moist, pliable and protective lining to the open cavities, that is, those communicating with the exterior of the body. The follicular and mucous glands secrete, while at the same time the epithelial cells elaborate, mucus. The rapidity with which fluids are absorbed is a physiological characteristic of mucous membranes. This action depends, with few exceptions, largely on the number of layers of epithelial cells.

Many cases of supposed lesion of the mucous membrane are what might be termed "traumatic"; for example, in an irritation producing reflex cough, the very act of coughing itself produces sufficient irritation to keep up a slight inflammatory process in the laryngeal or pharyngeal mucous membrane. Frequently, I believe, the lingual tonsil, from some inflammatory condition, is the real etiologic factor in many cases of supposed pharyngeal or laryngeal cough.

From a diagnosis standpoint, too much importance cannot be attached to the urinary examination, both chemic and microscopic, as it is a good index to the general systemic condition and will show any perversion from the normal. Equally important are examinations of the sputum and the blood.

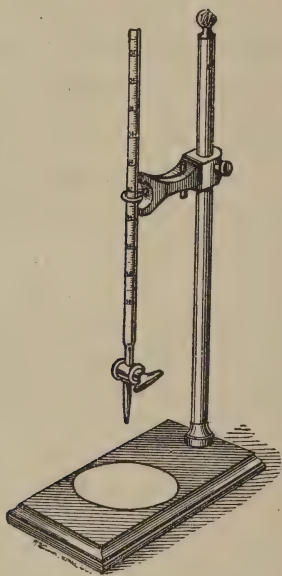
The Action of Neuenahrer Sprudel on Gastric Digestion. Wendriner found that this salt has very slight influence on the secretion of HCl and mucus. On the other hand, it increases markedly the motor power of the stomach. The secretion of pepsin is also increased.

THE MORE IMPORTANT QUANTITATIVE TESTS OF THE STOMACH CONTENTS.

BY BOARDMAN REED, M.D.

IN the number of the INTERNATIONAL MEDICAL MAGAZINE for December, 1898, I described briefly the simpler qualitative tests of the stomach contents.¹ It was by no means then intended to convey the impression that the other tests usually made by specialists are not necessary. In fact, most of them are really indispensable to an accurate diagnosis. But the almost universal neglect to make any tests whatever of the gastric contents, except in very serious and advanced cases in which cancer of the

stomach is suspected, led me to consider it improbable that you, as general practitioners, would be particularly interested in the quantitative tests. Nevertheless, certain of the latter should be understood and employed by every physician in the stubborn dyspepsias, unless the help of a specialist is to be invoked in all such cases. By means of a recently discovered method, the more important quantitative tests can be readily made by any one possessing even a minimum amount of chemical knowledge; and this series of talks would be incomplete without an account of them.



The only additional apparatus absolutely required is a graduated cubic centimeter measure and a burette, which can be obtained at a trifling cost. The burette to be used is the same instrument mentioned in my talk

entitled "Some Often Neglected Points in Examinations of the Urine," which appeared in the number of the INTERNATIONAL MEDICAL MAGAZINE for February, 1899. (See accompanying illustration.)

Premising that you have already made the Guntzburg qualitative test for free hydrochloric acid, described in the previous talk above referred to, I will describe to you how you may determine most readily by a series of associated tests the quantities present of (1) free hydrochloric acid, (2) combined chlorin (*i.e.*, the HCl loosely combined with the albuminoids of the food), and (3) the total acidity or sum total of all the free and combined acids, mineral and organic. This is called Toepfer's method, and, while less scientifically accurate than some of the very

¹ This and four others of the writer's talks on subjects connected with diagnosis and treatment of gastro-intestinal diseases have been republished in the form of a brochure, which may be had of E. B. Treat & Co., 241-243 West 23d Street, New York.

elaborate ones, it is reliable enough for practical clinical purposes in all cases in which even a trace of free hydrochloric acid is present, and also in other cases, except those in which there is at least 0.2 % of lactic acid, or a large excess of the organic acids present, as shown by the characteristic odor of vinegar or butyric acid.

In chronic, painful, or flatulent indigestions the treatment, medicinal, dietetic and mechanical, should be very different when there is a deficiency of hydrochloric acid from that imperatively demanded when there is persistently a decided excess of the same, as happens in fully one-half of all such cases.

In the former condition (hypochlorhydria) it is proper to administer hydrochloric acid and pepsin freely as medicines, order a stimulating diet, including meats, hot, well-salted soups (except in dilatation of the stomach), as well as a moderate use of condiments, wines, etc., and to have daily vigorous massage of the abdomen. In the condition of hydrochloric acid excess (hyperchlorhydria), on the contrary, all the above-mentioned prescriptions would tend to aggravate the disease and we must administer full doses of alkalis, forbid abdominal massage, and allow only the blandest and most unstimulating diet, including milk, eggs, butter, vegetable purees, maccaroni and the gluten preparations generally, along with a moderate amount of the farinacea, including especially the more finely ground and bolted cereals made into mushes, thoroughly cooked, and taken with cream or rich, new milk.

The total acidity is equally important. When there is an absence of free hydrochloric acid, even though the amount of the combined chlorin should not have been determined, the finding of a high total acidity—above 60—would point to an excess of organic acids from fermentation, while a very low total acidity—15 or below—would speak in favor of either more or less complete gastric atrophy, or a temporary paralysis of secretion from various causes.

For the Toepper test, you will need, in addition to the burette with graduated measures, pipettes and cups or glasses holding two or three ounces, several chemical solutions, as follows: A $\frac{1}{10}$ normal solution of caustic soda, with which the burette must be filled, preferably up to the zero mark, before beginning; then, besides, the following three solutions to be used as indicators: (1) A $\frac{1}{2}$ % alcoholic solution of dimethyl-amido-azo-benzol; (2) a 1% watery solution of alizarin, which is known chemically as alizarin monosulphonate of sodium; (3) a 1% alcoholic solution of phenolphthalein. The soda solution and the indicators No. 1 and No. 3 have been already mentioned in previous talks.

No. 1 does not react to combined hydrochloric acid or acid salts of any kind, nor to moderate amounts of the organic acids, especially in the presence of peptones, but gives a brilliant red color with the faintest admixture of hydrochloric acid in the free form.

No. 2 produces a clear violet color when mixed with a solution containing any of the acidities to be found in stomach contents, except that arising from the presence of combined hydrochloric acid, or, as Van Valzah and Nisbett well express it, alizarin "is sensitive to all the factors of gastric acidity except the combined HCl."

No. 3 only produces its characteristic dark red color in the stomach contents when all the elements of acidity, including free and combined acid of every kind, have been neutralized by the soda solution.

To make the three tests, (a) measure into a beaker, or glass of any kind, 10 c.c. of the filtered stomach contents (though 5 c.c. will answer for each of the tests, when an insufficient amount of the contents has been obtained) and add to it two or three drops of the No. 1—dimethyl-amido-azo-benzol. A brilliant carmine color is produced if there be the slightest proportion of free hydrochloric acid present. If this results, add the soda solution from the burette, drop by drop, till the bright red begins to fade to a dingy, reddish yellow. This shows that all the free hydrochloric acid has been neutralized. Be careful to stop when the fading from the bright red first becomes decidedly apparent. Suppose the result of this process (called technically a titration) to show that 2.5 c.c. of the standard soda solution were necessary to neutralize 10 c.c. of the gastric contents. This would be equal to ten times 2.5, or 25 c.c. of the solution for 100 c.c. of contents, and all such calculations are made upon the basis of 100 c.c. The amount of free hydrochloric acid would, in this instance, be expressed arbitrarily by the figures 25 by some authors, while others figure out the exact equivalent percentage of free hydrochloric acid by multiplying the finding 25 by the fraction .00365, which has been found to represent very nearly the amount of hydrochloric acid which each c.c. of the soda solution will neutralize. Making this multiplication thus, $.00365 \times 25 = .09125$, and we obtain the decimal fraction .09125 as expressing the percentage of free hydrochloric acid present.

(b) Next, to 10 c.c. of the stomach contents add two or three drops of the No. 2 (alizarin solution) and titrate, that is, let the soda solution flow into the mixture, drop by drop, until it changes it to a clear violet tint. Suppose 6 c.c. of the soda solution to have been used in this titration, we multiply by 10 to find the aggregate amount of the free hydrochloric acid, organic acids and acid salts, but not including the combined hydrochloric acid, *i. e.*, the HCl combined with the albuminoids of the food. It will be remembered that alizarin reacts to all the elements of acidity in the stomach except the combined hydrochloric acid. We have then obtained the figure 60 as representing conveniently the amount of these combined acidities in 100 c.c. of the fluid being tested. As only a small part of this is composed of HCl in any form there is clearly no excuse in this instance for multiplying the figure 60 by the fraction .00365 to obtain its equivalent value in terms of hydrochloric acid.

(c) We determine by a third titration the aggregate of all the acid elements, mineral and organic, free and combined, in the fluid under examination, to obtain what is called its total acidity.

To 10 c.c. of the fluid in a third vessel we add two or three drops of the No. 3 (phenolphthalein) and allow the soda solution to flow in as before. Soon a circle of red will surround the drops of the alkaline solution as they fall into the stomach contents, fading out again as the acids at first quickly neutralize it. Later the whole becomes a light rose red, showing nearly complete saturation, but Hemmeter, as it seems to me, very properly, insists that we should go on adding the soda until each drop, as it falls in, no longer darkens perceptibly the mixture. Then neutralization is complete.

Suppose, for example, 8 c.c. to have been used in this titration, we multiply by 10 and obtain 80 as the total acidity.

Thus we have by these three titrations ascertained directly the percentage of free hydrochloric acid and the figure which represents the total acidity. Now, as the third titration (c) determines the sum total of all the acidities present, and the second titration (b) reveals the amount of all the acidities except the combined HCl, it is manifest that we have only to subtract the result of (b) from that of (c) to obtain the amount of the combined hydrochloric acid.

Making this subtraction with the hypothetical figures above given, we have $80 - 60 = 20$. In this instance, it is proper to multiply the 20 by .00365 in order to obtain the actual percentage of combined hydrochloric acid present. In the supposed case this would be $20 \times .00365 = .0730$.

This may seem complicated, and a little puzzling at first, but when one has conveniently at hand the reagents and the few appliances required, the actual processes of titration may be easily and quickly performed, while the calculations are simple enough.

The three steps may be thus briefly summarized:

(a) Find how many c.c. of the soda solution are required to neutralize the measured amount of the stomach contents with No. 1 as an indicator, and multiply this by 10, if 10 c.c. of the contents are being tested, or by 20, if only 5 c.c. are under examination. Set down the product.

(b) Find how many c.c. of the soda solution are needed to neutralize a like portion of the stomach contents with No. 2 and multiply as before to obtain the result for 100 c.c.

(c) Find how many c.c. of same solution are needed to neutralize an equal portion of the stomach contents with No. 3, and multiply as before. Subtract the result (b) from that of (c) and note the remainder. The result of (a) multiplied by .00365 gives the percentage of free HCl, the remainder of (b) from (c) multiplied by the same fraction gives the percentage of combined HCl, and the figure obtained by (c) represents the total acidity.

REPORTS OF INTERESTING CASES.

A SUPERNUMERARY GLANS PENIS.

BY THOS. B. FOWLER, M.D.,

Editor of THE INTERNATIONAL MEDICAL MAGAZINE:

In contrast to a case of "Congenital Absence of the Glans Penis," reported in the March issue of your journal (page 211), I wish briefly to record what might be termed a congenital supernumerary glans penis, in a child about three years of age. The extra glans was a complete duplicate of the other, with the exception that it was imperforate, being attached just beneath and posteriorly by a small particle or neck. What would naturally be called its under surface was turned upward, facing the lower surface of the normal gland. Both were of same size and covered by a common foreskin, and it was not until the growth of the organ forced it—the extra glans—beyond its covering that the anxious mother made the discovery. The extra glans was removed with the knife, the resulting wound healing nicely in a few days.

Cohocton, Steuben Co., N. Y., March 27, 1899.

THE SURGEON'S CONSULTANT.¹

TREPHINING, Tracheotomy, were well within his line,

In shock and amputation he succeeded every time.

His fame spread East, his fame spread West,

This surgeon of to-day:

The man who came in ambulance (with light purse) *walked away*.

But Doctor Q. Pid heard his fame, and, jealous at the sound,

Set out to meet the Surgeon upon his daily round.

He aimed an arrow—twanged his bow, with archer's graceful ease;

The Surgeon fell, a victim to a chronic heart disease.

From East, from West the doctors came; in vain they used their art;

The wound was deep, the shaft remained fast in the Surgeon's heart.

The doctors dosed and diagnosed, the Specialist heaved a sigh,

Useless the wire of Dr. Bill—the Surgeon had to die.

At last, in desperation, in this seeming hopeless place,

They called a woman to their aid, and gave to her the case.

She cooled the fever, calmed his pulse—his strength came as of old;

She used for her ligation a simple band of gold.

The antidote she thus prescribed at once removed all pain.

She hypnotized the Surgeon, who was soon himself again.

Trephining, Tracheotomy, are still within his line,

But for arrow and heart wounds, he calls a woman every time. A. C. H.

¹ Response of Dr. E. W. Holmes, 1930 Chestnut Street, Philadelphia, to the toast, "The Women Doctors," at the farewell banquet given to Dr. John Guiteras by the Guiteras Medical Society of Philadelphia. From the pen of his daughter.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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FRANK BILLINGS, M.S., M.D.,

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AND

WILLIAM E. HUGHES, M.D.,

Professor of Clinical Medicine, Medico-Chirurgical College; Visiting Physician to the Philadelphia Hospital; President of the Pathological Society; Pathologist to the Presbyterian Hospital, etc.

On the Etiology of "Phlegmones Emphysematosae" and "Emphysematis Hepatis." Kvjatkovsky (*Bolnitshnaja Gaz. Botkina*, Vol. X., Nos. 11 and 12), after an exhaustive review of the literature on this subject, adds three more cases of this affection to the many others observed by Arloing, Fraenkel, Levy, Welch, Nuttal, etc. One is that of a young peasant who died in consequence of a compound fracture received from a fall. During life emphysema developed in various parts of the body. Autopsy revealed fatty degeneration and emphysema of the heart, liver and kidneys, pulmonary edema, emphysema of the pia mater, phlegmonous emphysema of the right humerus, etc. No microscopic or bacteriologic examination was made. The second case was that of a man, 31 years old, who died from septicemia following a urethrotomy performed for the relief of a stricture of the urethra. Autopsy showed parenchymatous degeneration of the heart and liver, pulmonary edema, chronic parenchymatous nephritis, phlegmonous emphysema of the femur and right gluteal region. The skin in many places crepitated. On microscopic examination were found cocci and thick bacilli, 4 μ long, with rounded ends, occurring often in pairs. They stained with Gram's solution, showing a non-staining capsule. In cultures on agar 3 kinds of colonies developed: streptococci, yellow staphylococci and the above described bacilli. The latter were also successfully cultivated on agar in the absence of oxygen. Stab cultures on plain and glucose-agar were followed in 24 hours by a rather slow growth with the development of gaseous bubbles which increased in number during the following few days. The same phenomena were observed on gelatin cultures. The gelatin was not liquefied. On potato the colonies were hardly noticeable by the naked eye and appeared in the form of a shining streak. Milk was coagulated in 24 hours with the formation of a foam. Bouillon became clouded, and a slight sediment formed within 24 hours. Experiments on animals showed this bacillus to be pathogenic to white mice and rabbits, the former being killed in 17 hours, the latter in 3 weeks. The injection of a pure anerobic culture in a

dog was followed by considerable infiltration at the site of inoculation, the exudate showing the presence of the bacilli. Microscopic examination of the tissues disclosed degeneration of the muscular fibers, infiltration of leucocytes, dilatation and hyperemia of the blood vessels of the connective tissue with a tendency to stasis and thrombosis; and, finally, formation of empty spaces. Similar observations were made on the third case of a woman who died as a result of typhoid fever complicating puerperium. On autopsy the spleen and liver were found to contain numerous air sacs of the size of a millet seed. The author comes to the following conclusions: (1) The bacillus observed in the last 2 cases is the "bacillus aerogenes capsulatus," or, as called by Fraenkel, "bacillus phlegmones emphysematosae." (2) It differs from bacillus coli communis by the presence of a capsule, non-motility, staining by Gram's method and peculiar growth on potato; from bacillus edematis maligni by non-motility, presence of capsule, staining by Gram's and growth on gelatin; from bacillus of Rauschbrand by non-motility, staining by Gram's, growth on gelatin and absence of spores. (3) The pathologic processes observed are produced prior to death and are not due to *post mortem* changes. (4) The bacillus is most often, if not always, found in the places where the pathologic processes occur, being often associated with the pus-forming cocci. (5) It can be reasonably supposed that the entrance of this bacillus into tissues subjected to acute suppurative inflammation produces a specific effect, which leads to the formation of gases and disintegration of the tissue elements. (6) This bacillus enters and spreads in the organism by way of the lymphatics and veins.

A. R.

Lavage for Headache. Peck (*Yale Med. Jour.*, May, 1899), in an article upon the treatment of headache, calls attention to Herter's method of washing out the stomach for migrainous headaches. The stomach—even if empty—is washed out with water at a temperature not less than 105° F. When lavage cannot be used, hot water should be drunk. The procedure relieves the pain, and if used at the outset may abort the attack. The rationale of the method is not clear, but may be explained as the relief of an exhausted nervous system from toxic material in the stomach.

The Failure of Antitoxin in the Treatment of Diphtheria. Herman (*Med. Rec.*, May 27, 1899), writing under the above title, asserts that the quoted diphtheric statistics, which have been thought to indicate the value of the antitoxin treatment, are grossly misleading, and endeavors to prove the antitoxin not merely a useless, but a dangerous and at times a fatally harmful agent. He claims that diphtheria at the present time shares with other infectious diseases, as typhoid (against which no new remedy has been directed [*sic*]), a marked mortality decrease, as shown by the statistics of German cities before, and since 1895. Statistics from selected cities are then given to indicate the great increase of diphtheria mortality during "antitoxin times" (1895-98) as compared with pre-antitoxin times. Herman then "cuts off the last leg of the antitoxin

argument" by showing that the bacterial diagnosis has led to the statistical inclusion of many mild cases formerly omitted as tonsillitis, etc., but fails to mention that membranous croup (laryngeal diphtheria) was also omitted from diphtheria statistics previous to bacteriologic method of diagnosis. [The recent remarkable statistics showing the immunity of children injected with antitoxin in infected foundling asylums, etc., from diphtheria or secondary ill effects, are not given. It is to be regretted also that statistics showing the severity of the epidemic, the time of administration of the antitoxin, and the reliability of the latter are not furnished by the author.—Ed.]

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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ASSISTED BY

J. DUTTON STEELE, M.D.,

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Clinical Observations upon the Structural Changes of the Heart in Chlorosis. Gautier, of Moscow, reports (*Deutsches Archiv. für klin. Med.*, Band 62, Dec. 22, 1898) a series of very interesting and exhaustive observations upon the heart in chlorosis. Of 22 cases, in which there were no pathologic conditions, except the anemia that could have produced changes in the vessels or heart, in 20 patients the dimensions of the relative cardiac dullness were increased. In several of these the condition was very pronounced. The extent of the relative dullness can only be explained through a general increase in the size of the heart. In several cases in which doubt could have been cast upon this statement, the diagnosis was confirmed by the Roentgen rays. The clinical symptoms during the course of the disease and of the convalescence warrant the statement that the enlargement was due to a combined dilatation and hypertrophy of the heart muscle. In a number of the cases the increase in size of the heart disappeared after the subsidence of the symptoms of chlorosis, but more frequently the area of relative dullness remained enlarged for some little time after the blood had become normal. The causes of the dilatation and hypertrophy are probably those of the chlorosis itself, namely, that the general impairment of all the tissues of the body in this disease affects the heart muscles. The normal circulation of the blood is overwork for such a heart and dilatation and hypertrophy occur. Gautier calls attention to the fact that such a condition is a pure example of a

transitory cardiac hypertrophy. It is possible that a hypoplasia of the heart and vessels may play a part in the enlargement of the heart in a very few of these cases, but G. thinks that such a condition is rarer in chlorosis than is usually thought. Many cases of so-called idiopathic cardiac hypertrophy may be explained by the application of G.'s theory. In certain cases there is such a functional weakness of the myocardium of congenital origin, that in time it exhausts its reserve strength in attempting to answer the normal demands upon it. Consequently, hypertrophy takes place. Cases of enlargement of the heart in chlorosis have been previously reported by Ott, Thurn, and Rieder. A very thorough review of the literature of the subject accompanies the article.

On the Pulsus Paradoxus, with Special Reference to its Occasional Occurrence on One Side Only. Harris (*Lancet*, Apr. 22, 1899) reports a case of pulsus paradoxus of one side, with a diagnosis of indurated mediastino-pericarditis, dilated heart, bronchitis, ascites, and chronic peritonitis, with inspiratory swelling of the veins of the neck. The pulsus paradoxus was more marked in the arteries of the left than those of the right side. The patient was under observation for two years and four months, in which time, the pulse was small and easily compressible on both sides. On the left, however, it was very much more irregular than on the right, and this irregularity was rarely associated with respiratory act. When the patient took a deep breath, the pulse at the left radial artery became quite perceptible; whereas, the change, if any, on the right was very slight, and on some occasions no change whatever could be noticed when a deep breath was taken. When deep inspiration was taken, and the breath held at the end of that act, the pulse of the left radial artery gradually returned, the successive beats getting larger and larger until, after 25 seconds, the waves were as high as during ordinary breathing. Harris is inclined to the opinion that the production of the pulsus paradoxus on one side depends in some conditions upon the narrowing of the main arteries on that side, and that cardiac weakness is one of the essential factors in the production of pulsus paradoxus; hence when the heart is weak, in addition to unilateral narrowing of the vessels, the peculiar phenomenon is more easily produced. He agrees with Schreiber that a case of true pulsus paradoxus is one in which there is marked diminution in the volume of the pulse of all the arteries, occurring during regular inspiration, not requiring it to be a deep one, and in which the peculiar pulse intermission is accompanied by a regular action of the heart, while the heart itself shows no weakening in its action during the period while an inspiration is being made. If such a condition is associated with an inspiratory swelling of the cervical veins, it may be regarded as pathognomonic of indurated mediastino-pericarditis. The autopsy in the case showed an extensive mediastino-pericarditis with its common complication of chronic peritonitis. The adhesions involved the whole mediastinum, and extended far enough to involve both subclavians; but, as far as could be seen, the adhesions were equally numerous and of a similar nature and arrangement around all of the vessels springing from the arterio-aorta.

It is, however, probable that the adhesions were so arranged as to produce some narrowing of the arteries on the affected side upon inspiration. If this were not the case, the explanation is probably that the greater length and narrow lumen of the left subclavian artery would be more likely affected by these adhesions than the same artery on the right side. A number of pulse tracings accompany the article. [Compare the abstract of an article by Reineboth (*INTERNATIONAL MEDICAL MAGAZINE*, Oct., 1898, p. 700), in which a very similar case is reported. Attention is called to the fact that the weakening of the heart action is a very important element in the causation of *pulsus paradoxus* of one side.]

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Final Report of Schlatter's Case of Removal of the Stomach.

Schlatter (*Med. Rec.*, Mar. 18, 1899) reports the death of the woman from whom he removed the stomach on December 25, 1897. After gaining in weight and improving in health for over a year, she suddenly began to lose in weight, complained of pains in the side and back, and an examination revealed a hard, nodular tumor of the size of a child's head in the left hypochondrium. She became very cachectic and died on October 29th. A *post-mortem* examination revealed carcinomatous lymphatic metastases in the mesenteric, retroperitoneal, bronchial, and subclavicular glands, and studding of the pulmonary pleura with metastatic nodules. The microscopic examination showed a very peculiar condition of the mucous membrane at the site of the esophago-enterostomy; it was neither of the esophagus nor of the stomach. As no dilatation of the lower part of the esophagus occurred, the assumption during life that a pouch formed which compensated for the absent stomach was not correct, the explanation of the ability of the patient to take large quantities of food being that the liquid portions passed at once into the small intestine. The death in this case not being due directly or indirectly to the operation, the conclusions arrived at by the author during the life of the woman are generally correct.

Remarks upon Exploratory Operations upon the Stomach for Obscure and Obstinate Gastric Symptoms. Maylard (*Lancet*, Apr. 8, 1899) urges the advisability of an exploratory operation in all obscure cases which cannot be benefited by medical treatment. The

dangers of an aseptic operation are practically *nil*, while the benefits that may be derived are incalculable. "If," the author argues, "in a diseased area, accompanied frequently with grave complications, we can successfully operate upon the stomach, it is only reasonable to suppose that with all our modern precautions and complete equipments we may still more successfully operate upon a comparatively normal region or organ." In cases of cancer, an early operation may result in a cure, while delay until a tumor or any other patent sign of cancer appears proves fatal. Besides being of extreme diagnostic value, an exploratory operation has been found curative, even in purely functional disorders of the stomach. Thus, Dr. Bradford and Mr. F. Freres report each a case in which an exploratory operation performed for the relief of an obstinate, and obscure affection of the stomach failed to reveal any pathologic condition and yet the patients got well. The author also reports a case of dilatation of the stomach of long standing, which could not be relieved by the usual medicinal treatment but was cured by an operation, although the dilatation in this case was not dependent on any organic lesion. It is also interesting to notice that in this case the operation was followed by a severe hemorrhage, resulting from the bleeding of some small vein. The patient lost 35 ounces of blood, and a second operation was performed to stop the bleeding. In spite of this, the recovery was uneventful, "showing," as the author remarks, "how much can be done upon the stomach without any ultimate ill result." [Intragastric electricity, properly applied, rarely fails to contract dilated stomachs in the absence of stenosis of the pylorus. It should always be tried before resorting to surgery.—B. R.]

Treatment of Constipation without Drugs. Illoway (*N. Y. Med. Rec.*, Apr. 8, 1899) commends the following measures as rational and curative: (1) Proper regulation of diet; (2) carefully administered massage; (3) electricity; (4) hydiatic applications aimed to overcome intestinal inertia. The use of cathartics is condemned, while mechanical measures only are considered to be curative.

On Massage of the Stomach and Large Intestine after the Introduction of Medicated Solutions. Wegele (*Zeits. f. diät. u physic., Ther.* II., Heft III.) recommends massage of the stomach for the direct treatment of the mucous membrane by medicated solutions. His method consists in introducing the desired medication into the stomach either by means of the tube or drinking. With the patient in the recumbent position, the abdomen is subjected to deep kneading; strokes being made from left to right, from above downward and *vice versa*, and cross friction. By these means the medicated solution is brought into intimate contact with every part of the mucous membrane. This treatment is taken before breakfast, and should not last longer than 5 minutes and in many instances be limited to 2 or 3 minutes. At the end of the sitting the medicated solution is expressed or washed out through the tube. Of the various drugs thus employed, the author recommends normal salt solution, or 1% ichthyol in chemic insufficiency of the stomach. In chronic

hyperacidity $\frac{1}{2}\%$ of Carlsbad salt, or bismuth in suspension (10-12:200) are used. Hypersecretion is treated by $\frac{1}{2}\%$ solution of nitrate of silver, followed by irrigation with salt solution. Decoctions of hops or quassia are useful in nervous anorexia. In dilatation of the stomach any of the anti-fermentatives may be used. When the motility of the stomach is good, massage preceded by a glass of Kissingen, Carlsbad, or Vichy water is quite sufficient. Massage, on the other hand, is contraindicated in active inflammations of the gastric mucous membrane, in ulcer, cancer, acute gastritis or perigastritis. In employing this method in the large intestine, the author uses the oil injections. The oil at body temperature is introduced into the colon and allowed to remain for 4 hours, when the abdomen is massaged. In constipation due to hysteric paresis of the intestine the author found it necessary to resort to the injection of 2 to 3 drops of croton oil in emulsion prior to the massage. In treating chronic diarrhea injections of tannin, ichthyol and other astringents are employed. The massage in this case should be very gentle and limited to soft strokes and friction. [It is questionable whether massage of the stomach in pronounced hyperchlorhydria would not aggravate the disease, even after introducing an alkalin solution. If the massage were active or deep, it certainly would tend to increase the secretion.—B. R.]

A Case of Operative Treatment of a Stomach Presenting the Shape of an Hour-Glass. Zejdler (*Bolnitshnaya Gaz. Botkina*, Vol. X., No. 1) reports a case of a woman, thirty-three years old, who suffered for five years from pain at the pit of the stomach, at times very severe; constipation and occasional vomiting one to two hours after meals, some emaciation of late. On palpation a tumor was felt in the epigastric region, to the left of the median line. It was of the size of a fist, reaching down to within a finger's-breadth of the umbilicus. Painful on pressure. On percussion, a dull sound was elicited, separated from the dullness of the spleen by a wide area. The stomach was dilated, the lower border reaching midway between the umbilicus and pubes. Examination of vomit showed the presence of HCl, and absence of lactic acid or any other abnormal condition, except yeast fungi. During her stay in the hospital, it was observed that the tumor occasionally diminished in size after vomiting. A diagnosis of perigastritis resulting from a gastric ulcer was made, and an operation performed. On opening the abdomen, the stomach was found dilated and adherent to the spleen and the abdominal walls to the left of the linea alba. At about the middle a cicatricial band divided the stomach into two equal compartments, communicating through an opening of the size of the pylorus. The greater curvature was at this point drawn up, forming what is called *ventriculus bissacatus*. Gastro anastomosis, after Wölfler's method, was performed, and the patient fully recovered, except some remaining dilatation. In discussing the symptoms of this affection, the author does not find them sufficiently characteristic or of constant occurrence to render the diagnosis easy. The most important sign is the division of the stomach into two sacs after inflation. Often a splashing sound is heard, while the tube fails to bring up any contents. A sudden flow of stomach contents after the water

during lavage is returning clear may also occur. Several times a swelling under the left ribs has been observed after a heavy meal, disappearing after vomiting. Pain in the left side, under the ribs, and vomiting, are constant symptoms. The majority of authors claim an absence of HCl, which was not the case in this patient.

NEUROLOGY.

UNDER THE CHARGE OF

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AND

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Mèralgie Paresthésique (Névrite du Femoro-cutané). Paresthetic Meralgia (Neuritis of the Femoral Cutaneous). Claisse (*Gaz. des Hop.*, Dec. 20, 1898, No. 149) calls attention to a condition of disturbed cutaneous sensibility of the thigh, particularly the antero-external portion. He considers it important because of the danger of confounding it with grave nervous disorder. In three cases studied by him, the principal feature was an area of anesthesia and paresthesia in the upper portion of the thigh. This area was racquet shaped, with the handle upward, and was easily outlined from 10 to 30 cm. above the supero-external angle of the patella, with a breadth of 5 cm. Sensation to pain and temperature was retained but retarded. There were no trophic lesions and in two cases the knee-jerks were unaffected. The third patient also had paraplegia and atheromatous vessels; but there was no relation between these conditions and that under discussion. The regions involved in this affection are those portions of the thigh supplied by the middle cutaneous branch of the crural nerve (meralgia anterior) and by the external cutaneous nerve (meralgia antero-external). The latter is affected most frequently. The painful character of the affection may be slight or intense, patients sometimes complaining of lightning pains. The precise topography, the absence of motor or trophic symptoms render the diagnosis easy, but the possibility of an initial tabetic manifestation must be considered. Pathologically, the disease is probably a local neuritis with trauma and the action of heat or cold as excitants. The prognosis is usually good. [A case with microscopical examination of the affected nerve has recently been reported. Neuritis was found. The disease is also known under the name of "Bernhardt's disturbance of sensation in the thigh." The reported cases are becoming quite numerous, and recently, before the Philadelphia Neurological Society, Musser and Sailer were able to give the clinical histories of 8 cases. Two or three cases have also been observed within the past few months in the nervous clinic of the Polyclinic Hospital of Philadelphia.]

The Treatment of Tetanus by Means of Intracerebral Injections of Antitoxin. Rambaud (*N. Y. Med. Jour.*, Dec. 17, 1898) calls attention to the cases treated by this method abroad and in the United States since the report of the work of Roux and Borrel. In his résumé of 12 cases he notes 5 successful ones. Of the fatal cases, 3 died within 15 hours after the operation; that is to say, before the antitoxin had an effect; another died in a septicemic condition with renal disorder and profound anemia, a fifth had been treated by Quincke's method of lumbar puncture.

Intradural Spinal Tumor Opposite the Body of the Fourth Dorsal Vertebra; Complete Paralysis of the Parts below the Lesion; Operation; Recovery, with Ability to Walk without Assistance within Three Months. Eskridge (*Phil. Med. Jour.*, Dec. 10, 1898) reports a case in which he made a correct diagnosis of intradural spinal tumor on account of the existence of unilateral nerve-root symptoms for a year; the presence of nerve-root symptoms for six months before the appearance of cord-symptoms; the development of bilateral cord-symptoms two weeks after the parents and the boy first noticed any trouble that indicated a lesion in the cord; and the absence, when he (Eskridge) first saw the patient, before absolute paralysis had set in, of the usual symptoms of a unilateral cord-lesion, such as motor paralysis on one side of the body and anesthesia on the opposite, and this notwithstanding the fact that unilateral nerve-root symptoms had been present for a year. The location of the tumor was determined by the highest level of the loss of sensation. The spinal column was opened in the upper thoracic region by Dr. Freeman, and a bean-shaped tumor was found within the dura, beneath the third vertebral arch, on the right side of the cord. The patient made a complete recovery after the operation, and when last seen was apparently perfectly well. This case is very carefully reported and is worthy of study.

The Manifold Uses of the Hairpin in Surgery. The hairpin, besides being used for cosmetic purposes, can be made to replace many a costly surgical instrument by the simple ingenuity of the physician. According to Ebersson, it is useful to fasten bandages and other dressing. When given the proper care, it can be used for the extraction of foreign bodies from the nose, ear and other cavities. It will also serve the purpose of a dull curette for removing exuberant granulations, etc. When straightened, it makes a very good probe and applicator, and can even replace the costly Bowman's probes with that distinct advantage that a separate set can be used in each case of gonorrheal affections of the lachrymal passage. In these, as in all similar cases, the hairpin should be perfectly smooth and properly sterilized. In cases of emergency a hairpin can be used as retractor in tracheotomy and similar operations. A bleeding vessel can also be tied by it. A new and elastic hairpin will make a very good retractor for the eyelids. Finally, when heated, it will make a very serviceable cautery.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Movable Kidney and its Treatment. R. R. Smith (*The Physician and Surgeon*, Feb., 1899) says that the terms "floating" and "movable" kidney are usually synonymous, although, strictly speaking, "floating kidney" should be reserved for the anomaly in which the kidney is movable and is attached to the abdominal walls by a so-called mesonephus. The condition is rare, and it is only with acquired movable kidney that we have to deal. Two cases of floating kidney were reported by Bruce and Clarke. Pregnancy is commonly assigned as a cause, but we find it in women who have not borne children, and even in men. Women who are thin are more apt to have the condition. The symptoms vary in different cases: some have none and others have a great many which are not always due to the floating kidney. Pelvic trouble generally coexists with floating kidney. The symptoms are divided into three groups: (1) Pain; (2) derangement of digestion; (3) disturbances of the nervous system. Pain is commonly due to twisting of the ureter, and is paroxysmal, very severe, and passes away suddenly or gradually. To distinguish between floating kidney and renal colic is sometimes very difficult. Edebohls calls attention to catarrhal appendicitis associated with movable kidney. Most patients with this disease are neurasthenic. The diagnosis is easy, and generally made without difficulty. The treatment of some of the cases is palliative. Operation is considered the method par excellence. [Movable kidney is usually one symptom of a general prolapse of the abdominal contents. It may often be cured by massage, gymnastics and proper hygiene, including appropriate diet and dress.—B. R.]

Some of the Clinical Aspects of Granular Kidney. West (*The Lancet*, Feb. 11, 1899) states that this is very important on account of its frequency. It is often discovered *post mortem* when not suspected, and thus explains why death has occurred in other diseases that are not generally fatal. The percentage of granular kidney at *post mortem* is from 13.2 to 18%. Out of 79 cases admitted into St. Bartholomew's Hospital, 38.4% died of granular kidney as the sole cause. It is a bilateral and to a great extent symmetrical affection. Extreme contraction is very rare. The opinion is that the kidney is greatly reduced in size, but this is not always the case. The kidneys are not generally granular on the surface, although microscopically the interstitial change may be marked enough.

A typical granular kidney is small, contracted, hard, cirrhotic or granular, and has a nodular surface, often studded with numerous cysts. On section the kidney is found to be cirrhotic and wasted, but the wasting affects chiefly the cortical region, and consists in fibroid induration and cellular degeneration. Granular kidneys are sometimes described as of two kinds, the white and the red, and are further called the contracted white and red. The author does not approve of the classification, and thinks that the term, white cirrhotic and red cirrhotic would be much better, as he considers the difference to be one of color chiefly. Microscopically, the distinction between the two forms is open to question, and clinically he can see no distinction at all. Granular kidney is often described as chronic interstitial nephritis, but all forms of this disease are not necessarily granular kidney. The author excludes unilateral lesions of the kidney, patchy fibrosis, the results of infarcts or gummata, bilateral lesions of both kidneys, certain forms of chronic interstitial nephritis, which are often included pathologically, but clinically are distinct. Granular kidney is divided into two forms—arterio-sclerotic and renal—and they are dealt with in different places, one under the diseases of the vessels, the other under diseases of the kidney. The pathologic possibility that acute parenchymatous nephritis might end in granular kidney seems to be very rare. In all his experience the writer has never seen any instances in which the lesions have gone so far as to produce a somewhat diminished white kidney, the majority of such kidneys being still much above normal size.

It is possible that the condition would be more frequent if the patient lived long enough. It does not necessarily follow, even when the symptoms of clinical parenchymatous nephritis last for a number of years, that we have contracted kidney. The changes in the arteries are generally widespread, in fact universal throughout the whole body. Two forms of general arterial change are recognized in pathology—atheroma and that connected with granular kidneys. In advanced age the two conditions, atheroma and granular kidney, may be associated, but this is very rare in the young. The relation between the cardio-vascular and the renal lesions is very difficult to determine. The cardio-vascular lesions, being of the nature of hypertrophy, are, as in other cases, the response of the heart to some extra continued work thrown on it, and are therefore secondary. If the change in the peripheral vessels be structural and the lesions in them of a degenerative character, they would involve the kidneys as well as other parts; and in this way it is conceivable that the kidney disease might be a subordinate part of the general vascular disease. This theory is indicated by the term "arterio-sclerotic kidney." If the changes be not of a structural character, but a functional one, any structural change that is found, being of a secondary and subsequent order, the obstruction must depend upon some impurity in the blood. This impurity may be either of a renal or extra-renal origin. Thus we are brought back again to the two original views about which so much discussion has raged, viz., whether the disease is primarily arterial or primarily renal. Granular kidney is a disease that presents no symptoms, and is insidious in character. The only definite symptom in the early stage is frequent

micturition, especially at night. When symptoms are present the disease is far advanced. The symptoms as stated above are cardiac and renal. The cardio-vascular are earlier than the renal, and the former includes heart failure and consists chiefly of hemorrhage and its results. The renal symptoms fall into two groups, namely, chronic and acute uremia. The author prefers the term acute and chronic toxemia. He also prefers renal cachexia for chronic uremia. In the early stage of granular kidney the diagnosis must be made by the physical signs, not the symptoms. The thickening of the arteries is one of the cardinal signs of the disease, and is never absent in advanced cases. The low arterial tension, or rather the fall in tension, in the later stages of granular kidney, is of great clinical importance. Another important symptom is the eye changes met with in granular kidney. When with other symptoms there is found albuminuric retinitis, or early changes which lead to it, the diagnosis may be justly made of granular kidney. The author thinks that where high pulse tension and thickened arteries are found in the young, granular kidney is more than likely.

DERMATOLOGY.

UNDER THE CHARGE OF

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Acute Circumscribed Edema Associated with Hemoglobinuria.

Wende (*Jour. of Cut. and Gen.-Urin. Dis.*, Apr., 1899) reports the case of a man, aged 64, who suddenly developed upon the dorsum of his right hand a tumefaction of irregular outline and measuring 7 by 4 inches. The swelling was of the color of the skin, except at its summit, where dilated veins imparted to it a bluish tinge. It did not pit upon pressure, but was elastic, even to the extent of giving the impression of fluctuation. There were no subjective symptoms, other than numbness and stiffness. The swelling diminished in size at the end of 24 hours, but did not entirely disappear for 10 days. Later, a walnut sized swelling occurred upon the forearm and a smaller one upon the face. The urine was very dark, and appeared to the naked eye to contain blood. The microscope failed to reveal the presence of blood corpuscles, but tested with the spectroscope, absorption bands of oxy-hemoglobin were demonstrated. A second test made 24 hours later showed material diminution of the hemoglobin. On the day following the attack the blood appeared to exhibit a diminution in its hemoglobin, and a decrease in its specific gravity. The red corpuscles num-

bered only 3,520,000, whilst 4 days later they had increased to 4,450,000. But 2 cases of acute circumscribed edema with hemoglobinuria are recorded. The author is inclined to agree with previous observers in attributing the affection to exposure to cold when overheated.

Cervico-facial Actinomycosis. Legueu and Salmon (*Annales de Dermatol. et de Syphilolog.*, Mar., 1899) presented to the Société Française de Dermatologie et de Syphilographie a report of a case of actinomycosis occurring upon the face and neck of a 40-year-old woman. The affection began in May, 1898, when the patient was seized with severe headache, particularly upon the left side, which was aggravated by movements of mastication. Pains were also experienced in the jaw, in the orbit and upper portion of the neck. At this time there was no exterior sign of anything abnormal. Seven months later, the neck became stiff and painful and subsequently totally immobile. There then developed behind the left ear a tumefaction of considerable size. The mouth could no longer be opened as a result of a contracture of the jaws. The left side exhibited considerable exophthalmos. Behind and below the left mastoid apophysis a firm, hard swelling, with vague and undefined edges, developed. The skin was violaceous and stretched. At one point there was a depression with evident softening. At the same time a chicken-egg sized swelling developed in the right carotid region. Here the skin was soft and of normal coloration. Despite this, the patient's health was not bad. The patient had no fever, but her color was not good. Toward the end of January, the upper and lower eyelids of the left side became the seat of a hard tumefaction which spread slowly and imparted to the overlying skin a reddish color. The patient experienced severe pain. The swelling of the lower eyelid subsequently opened, giving exit to a reddish serous liquid containing characteristic yellowish granules. The same character of fluid had previously been evacuated from the other growths by incision. The patient was placed upon 2 grams of iodid of potash per day, and this was gradually increased to 8 grams. The patient improved to the extent of moving the head and opening the jaws. The pain was also considerably ameliorated. Histologic examination of the granules showed the presence of the fungus of the disease. The authors considered the prognosis in this case very grave.

Erysipeloid (*Erythema Serpens*). Anderson (*Brit. Jour. of Dermatol.*, Mar., 1898) reported to the Dermatological Society of London a case of erysipeloid occurring as a marginate erythema upon the hands of a woman. He stated that the affection had been long familiar at St. Thomas' Hospital among those engaged in the provision trade. T. Colecott Fox in his remarks said: "Rosenbach, in April, 1887, described an erysipelas-like affection frequently met with in cooks and kitchen workers, butchers, and those who handle game, fish, shell-fish, etc. It manifests itself chiefly about the fingers and hands, as a slowly progressing, sharply defined, slightly elevated, dark, violaceous, almost livid red zone, which develops around the site of inoculation, occupied by sensations of burning, itching and pricking. The area of redness extends peripherally, as the central

affection dies away without desquamation. A spontaneous cure results in 1, 2 or 3 weeks. Rosenbach declared the affection to be due to a micro-organism, supposed to be a cladothrix, which exists in dead and decomposing animal matter. He found a coccus associated with erysipeloid, somewhat larger than the staphylococcus, but on cultivation a closely-woven mass of fine threads of various lengths was formed. The inoculation of pure cultures produced a typical erysipeloid, the symptoms usually developing in forty-eight hours. The only requisite for inoculation is a small wound." The same affection was described by Marrant Baker in 1873, under the name of erythema serpens.

General Pigmentation. Galloway (*Brit. Jour. of Dermatol.*, Jan., 1899) presented at the Dermatological Society of London a case of general pigmentation of the body. At a previous meeting he had shown the case and had looked upon it as due to the prolonged administration of arsenic. This diagnosis had been supported by the peculiar tint of the pigmentation, and the fact that small points of darker pigment were scattered over the body. There was keratosis of the palms, and it had been proven by prescriptions and records that the patient had taken arsenic at intervals for years. It was also noted that the liver was enlarged. The liver increased markedly in size, the patient lost flesh and strength, and was removed to a hospital as a consequence of an attack of hematemesis with melena. The pigmentation had increased greatly, so that she was of a sepia-brown tint. The character of the enlargement of the liver was not quite determined, but the evidence was against malignant disease. Probably it was due to cirrhosis. There was no acanthosis, nor pigmentation of the mucous membranes; nor had there been more than very slight icterus. The case was brought forward as of interest in connection with the formation of pigment, probably true melanin, in cases of disease of certain of the abdominal viscera.

PEDIATRICS.

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Paresis of the Extremities in Scarlet Fever. Meyer (*Presse Med.*, p. 119, 1898), quoted in the *Monthly Cyclopaedia*, calls attention to a sign very constant in scarlet fever but not encountered in other eruptive diseases; this consists of a paresis of the extremities, the patient complaining that he cannot move the hands or feet. This is comparatively rare;

more often there is merely a numbness of the hands, with sensations of tingling or formication; numbness may be absent and only a pricking sensation localized in the extremities of the fingers or palms may be experienced. This sign appears during the period of eruption, occasionally earlier; its duration is variable.

Forms of Infantile Colitis. L. Guinon (*Gaz. Heb. de Med. et de Chir.*, No. 25, 1898) calls attention to a most important fact, which clinicians, in their zeal for recording new and accurate grounds for differentiation, are liable to overlook. He declares that the infantile gastro-intestinal tract presents a single entity. The stomach is also always more or less involved in intestinal disorders. He prefers the differentiation between symptomatic forms of colitis and entero-colitis as being more exact than enteritis follicularis catarrhalis. Chronic forms, he divides into the indolent, the enteralgic or the simple. A variety presenting dysenteric phenomena occurs only after 4 years of age, which is often due to chronic constipation a result of intestinal atony.

Pyocyaneus Infection in Childhood. Manicatide (*Jar. für Kinderheilk.*, B. XLV., H.1) reports 2 cases; one, a boy infant 14 months old, suffering from a chronic gastro-intestinal disorder, had practically recovered, when suddenly he was taken with severe symptoms of bronchopneumonia and died. At autopsy the skin was noted to be of a peculiar yellowish green color, and the mucous membrane of the larynx and trachea exhibited an abundant muco-purulent secretion. A careful examination of this secretion exhibited the presence of the bacterium coli, streptococcus, staphylococcus, and the bacillus pyocyaneus; in the lungs the pyocyaneus was again found, along with the pneumococcus; in the spleen in pure culture the pyocyaneus was again found; in the liver, the pyocyaneus was associated with the bacterium coli; and a pure culture of the blood from the heart and kidneys showed also the pyocyaneus. The second case was a boy of 4 years, who was recovering from diphtheria and had been treated with antitoxin. He suddenly died from febrile process and in nearly all the organs were found the bacillus pyocyaneus.

A Cycling Incident. An Australian champion cyclist fell forward in his saddle twenty-five yards before the end of a carnival race, and, with his feet still moving with the pedals, reached the winning-post, when it was discovered he was dead. The story appears to be well authenticated, and if so it records another striking instance of the indomitable pluck of athletic men. It shows, moreover, the unerring balance and precision needed in a race, and the instinct that caused the rider, even in the act of dying, to throw himself into and maintain a proper poise. This is the only instance, probably, ever recorded of a race being won by a dead man, and it is said the doctors stated he died during the last lap. Medical cyclists will naturally look forward with interest to learning further details of this most tragic affair.—*Med. Press and Circular.*

THERAPEUTICS.

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Ice or Cold as a Local Application. Ewart (*Lancet*, Apr. 8, 1899) calls attention to ice massage in painful cases of rheumatoid and allied forms of arthritis, and on the local application of cold in some other affections, by either Arnott's method [(rubbing the inflamed surface with ice from time to time) (1851-64),] or Esmarch's [(continuous application of ice bags) (1860)]. The first case mentioned was one of rheumatoid arthritis of the hip; salicylates, morphia, etc., were administered internally, and hot-air baths given. These seemed only to aggravate the condition, while hot applications gave only temporary relief. Finally, ice massage was tried. A piece of ice was gently rubbed over the inflamed area until numb. The coldness of the surface thus produced usually lasted about three-quarters of an hour, and was followed by a gentle glow of warmth, which was not objectionable. After several applications, the pain in the parts entirely left, and did not return. The second case was a woman, suffering from the same disease; delirious, systolic murmur at the apex, urine albuminous, etc. The usual constitutional rheumatic treatment was given, in conjunction with local warmth, and this failing to produce any amelioration, the ice treatment was tried. Immediately the woman became rational, fever subsided, as did all the acute local symptoms, although the joints were much thickened and stiffened. The third case was a woman suffering from pemphigus with acute and painful joint affection, hands, knees and ankles being involved. Ice locally gave permanent relief to these symptoms. The author mentions the use of salt, ice and methyl chlorid in sciatica, neuralgia, neuritis and lumbago by other writers who have reported cases with good results.

A Case of Tetanus Treated with Antitoxin, etc. Arneill (*Med. News*, Apr. 22, 1899) reports a case of tetanus in a colored boy, 16 years, caused by a wound in the foot from a rusty nail. It healed promptly, but 8 days later symptoms began to show and 2 days later were well developed; subcutaneous injections of antitoxin, 10 c.c. every 4 hours in conjunction with chloral, bromid, etc., until 90 c.c. had been given. He died 4 days after his first convulsion.

A Case of Herpes after Large Dose of Arsenic with Some Remarks on the Etiology. O'Donovan (*Jour. of Cut. and Gen.-Urin. Dis.*, Mar., 1899) reports a case where a girl of 16 years, Irish descent, not well developed, nor strong, neurotic type, was given Fowler's solution as a

tonic, and, not being careful in dropping the medicine, had taken much larger doses than ordered (*gtt. x*). In about a week the eyelids became so puffed she could hardly see. The arsenic was stopped. Five days after there appeared patches of herpes over the left shoulder, breast and arm, extending down to the fingers, outlining the skin supplied by the radial and median nerves, while over the breast it was that supplied by the anterior thoracic. The arm and shoulder were cauterized with the thermocautery, and then dressed with vaselin; this gave great relief. Two days later, she complained of some pain that seemed to radiate from a few vesicles. These were lightly cauterized, and afterwards all pain disappeared, while those elsewhere dried promptly, except around the breast, which still continued to give great pain. Internal treatment consisted of laxatives, and morphia and chloral, which was not required after the first two nights. Five months afterwards the pigmented spots had faded away, although slight scars from the cautery could still be distinguished. The author does not believe that herpes zoster is a disease due to bacteria, as he cannot account for its being limited, and so well confined to certain nerve areas. His belief is that some degenerative change takes place in the terminal nerve filaments, and not in the nerve ganglia, as in his case. The part in which the pain was relieved was where the cautery had been most freely applied, and if it had been central, he thought the pain in the breast should have been relieved by the application to the arm; whereas, the relief from pain was only where the herpetic vesicles had been destroyed.

Paraldehyde in Asthma. Macgregor (*Lancet*, Feb. 11, 1899) has used this drug in cases where morphia and chloral failed to give relief; he accredited Dr. Mackie, of Elgin, to be the first to recommend it. Paraldehyde is a drug that can be given with less apprehension to this class of patients than those usually prescribed. He mentions 11 cases in which he used this drug with equally good results. The obtaining of sleep alone is of the utmost importance in this class of cases, and from the fact that paraldehyde is eliminated, to a great extent, by the lungs through the breath, it would seem as if it acted directly upon the lung tissue. The slowing of the respiration is also a distinct advantage. The dose prescribed was usually 3ss, given if possible after the patient had been put to bed; to disguise its objectionable taste cinnamon water and orange peel may be used as a menstruum.

Formalin in the Treatment and Removal of Inoperable Malignant Growths. Mitchell (*Br. Med. Jour.*, Feb. 11, 1899), while trying to control a hemorrhage from a recurrent sarcomatous mass, about the size of a man's fist, on the face, found that formalin was not only a good styptic, but was also valuable in so hardening the growth that it could easily be cut away, a small portion at one time, without the loss of any blood; he applied a 20 % solution, on cotton, protecting the normal tissue with guttapercha and leaving it in contact with the mass for 24 hours. The hardened portion was then cut off and the dressing reapplied. Formalin injected hypodermically did not seem to give such good results as when applied to the surface. If the pain is severe or the edema of surrounding parts very marked, the application should be withheld.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Cancer. Under the title "The Parasite of Cancer," Russell (*Scot. Med. and Surg. Jour.*, May, 1899), and Park, "A Further Study into the Frequency and Nature of Cancer" (*Med. News*, Apr. 1, 1899), contribute two valuable papers bearing upon the causes of cancer, its method of propagation, distribution, etc. Park calls attention to the rapid and extraordinary spread of cancer. Thus, in England and Wales the death rate from cancer in proportion to the population has increased nearly five times, and in New York State, in 1887, 2,363 deaths were from cancer and 11,609 from consumption; in 1898, 4,456 deaths from cancer and 12,552 from consumption. It is the only disease showing a steady increase. At the present rate, in 1909 there will be more deaths in New York State from cancer than from consumption, small-pox, and typhoid fever combined. Park goes on to give reasons for believing in the parasitic origin of cancer, citing numerous results and giving statistics in support of his belief. He cites cases in which the evidence points to contagion, and others in which direct inoculation appears to be responsible, mentioning the case of Emson, who died of cancer 8 months after an injury received during operation upon a cancerous patient. Similar cases are cited. Russell's paper is a scholarly review of the experimental and other research work which has been done to demonstrate the parasitic origin of cancer. He reviews in detail his own work and the work of Sanfelice; the histologic research of Roncali, Busse, Kahane, and others, closing with a comprehensive bibliography. He gives the following conclusions of Sanfelice: "(1) That all authors who contend that Russell's fuchsin bodies are not blastomycetes have not hitherto brought forward experimental proof that they are cellular degenerations. (2) That through the inoculation of cats with pure cultures of *saccharomyces neoformans*, the typical bodies are produced which have been described by Russell and others, as occurring in malignant tumors in man, and in certain chronic inflammatory processes. (3) That these fuchsin bodies are not found in normal cats, but only appear in these animals when they are inoculated with pure cultures, as *saccharomyces neoformans*, or with pieces from the tissues of cats containing the typical forms of Russell's bodies." Russell's own conclusions in the matter may be summarized as follows: Blastomycetes resemble in a striking manner bodies found in cancer. The results of inoculation by blastomycetes strikingly resemble malignant growths, even to metastases. Sporozoa may cause malignant growth, but cultivation experi-

ments are necessary to establish this, and at present they are not successful. All existing evidence is in favor of blastomycetes.

A New Sign of Death by Submersion. Moreau (*La Presse Med.*, Apr. 2, 1899) calls attention to two points which he insists are indicative of death by submersion: (1) The presence of a clear and limpid liquid in the peritoneal cavity; (2) the presence in the bladder of a large quantity of clear urine but slightly colored. These signs are not invariably present. If death has taken place by inhibition of reflexes at the moment the victim fell into the water, the signs may be absent. Again, if the urinary bladder be full at the time of submersion, the addition of clear colorless urine may not take place.

Pseudo-tuberculosis. This important subject was discussed before the London Pathological Society March 7th (*Lancet*, Mar. 11, 1899). McFadyean agreed with previous speakers on the unscientific character of the term "pseudo-tuberculosis."¹ He admitted the existence of lesions macroscopically and microscopically, not to be differentiated from the true tubercle; by reason of the difficulty in demonstrating the bacillus, and also on account of the existence of other bacilli which closely resemble the tubercle bacilli, cases occur in which it is impossible to say definitely that the process is tuberculosis. He thinks, however, that the experienced observer will, in time, nearly always be able to give a definite opinion. He showed the following specimens as illustrating lesions closely resembling tuberculosis: (1) Small pin-head, shotty nodules in the lung of the sheep associated with an undetermined worm in the center of each nodule surrounded by leucocytes, and these by giant cells and, like tubercles, showing softening in the center. (2) Gray patches containing embryo worms and ova, in the lung of sheep. (3) So-called scrofula of sheep. (4) "Bacterial necrosis" in the liver due to the "necrosis bacillus." (5) Mycelium nodule in the lung of a horse. Fullerton agreed as to the possibility of lesions macroscopically and microscopically resembling tubercles, and demonstrated specimens of general infection in guinea-pigs by cultures of pathogenic yeasts. Pakes referred to aspergillosis as one of the forms of pseudo-tuberculosis. Lazarus-Barlow mentioned a form of tuberculosis in diabetics in some cases in which the tubercle bacillus could not be demonstrated. The Society appointed a committee consisting of the president, Dr. Payne, Drs. McFadyean, Woodhead, Shattock, and Fullerton, to devise a nomenclature of the forms of granulomata which have been included under the term "pseudo-tuberculosis."

Note on the Flagella of *Micrococcus Melitensis* and *Bacillus Pestis*. Gordon (*Lancet*, Mar. 11, 1899) takes issue with the observers who state that *micrococcus melitensis* is a non-motile organism. He con-

¹ It occurs to the writer that, while the use of new words may be very undesirable, it might, under certain circumstances, be well to refer to these diseases as "tuberculoid" processes. The word tuberculoid is authorized. (See Gould's Dictionary.)

siders it motile and has been successful in demonstrating by the method of Pitfield and by Van Ermengen's method, the presence of flagella. As a rule a single flagellum is seen at either end. In very rare instances as many as three flagella may be counted.

A Case of Gastroschisis. Lockwood and Addison (*Quarterly Med. Jour.*, Apr., 1899) report a case of gastroschisis (exomphalos). During a tedious labor there suddenly occurred what was presumed to be rupture of the membranes, followed by the entire fetal intestines together with the liver, right kidney, and supra-renal capsule. At first it was believed to be rupture of the vagina, the mother's intestines presenting. Later examination showed that it was the child's viscera. Delivery was completed after removing the extruding viscera. The following is abstracted from the description of the specimens: The opening was in the umbilical region, ovoid in shape, 4 by 3 cm. The epidermis ended sharply at the margin of the ring, the peritoneum bulged forward to the umbilical cord and formed the walls of the sac in which the viscera had been confined. The umbilical arteries and vein passed along the lower edge of the sac. The extruded viscera were attached by a stalk consisting of the esophagus and some diaphragmatic muscular fibers to the crura of the diaphragm and posterior abdominal wall. The diaphragm was complete. The liver was unattached at the diaphragm. The viscera, delivered before the body, were the liver, stomach, and the whole of the intestinal canal down to the rectum, right kidney and adrenal, pancreas, the left adrenal, and spleen. The fetus and viscera are depicted.

CLIMATOLOGY AND HYGIENE.

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The Water Supply of Paris. The growth of Paris has compelled the authorities to search for a more abundant supply of water, and the necessity of providing against the possibility of a water-famine during the coming international exhibition is forcing itself upon their attention. The daily consumption of water is 121,000,000 gallons, or $28\frac{1}{2}$ gallons per head of the present population. It is estimated that the population of the city

will have increased in 1930 to three and one-third millions. Only 55,000,000 gallons of the daily supply are available for domestic use, and this would be sufficient were it not for the excessive waste. A portion of the water comes to the city through three conduits, respectively 64, 108 and 82 miles in length. Several projects are proposed to increase the supply: (1) To bring the water from Lake Geneva, 310 miles distant, at a cost of \$125,000,000. This was rejected as impracticable. Another plan, involving the construction of an immense storage reservoir, has been abandoned, and it is now considered preferable to increase the supply by conducting the water of certain springs at the sources of the Loing and Lunain. It is also intended to filter the river water through beds of sand. In brief, the plan is as follows: The aqueducts from the Loing and Lunain are to be finished in two years. Filtering beds are to be made, increasing the quantity of filtered water per day from 11,000,000 to 14,300,000 gallons. A reserve of river water equal to 28,600,000 gallons per day is to be provided. Plans are to be further prepared for bringing a fresh supply of 35,200,000 gallons of spring water per day to Paris, and works are to be constructed for its distribution.—(*Boston Med. and Surg. Jour.*, March 30, 1899.)

On Some of the Latest Advancements in Disinfection with Formalin. Wysokovitz (*Vratch*, Vol. XX., No. 10) communicated to the Medical Society of Kieff some of the experiments on formalin disinfection performed in the laboratory of Flügge. The method employed is very simple, not requiring any special lamps or other appliances. The room which is to be disinfected is tightly closed, all the openings and cracks being plugged with cotton immersed in corrosive sublimate solution, $\frac{1}{1000}$. The furniture is removed to the centre of the room; the bedding and clothing spread out so as to make everything easily accessible to the vapor. The formalin is then put into evaporating dishes or other suitable utensils placed on tripods, and slowly evaporated by means of alcohol lamps. Each 100 cubic meters of space require 800 c.c. of ordinary formalin, to which 3,200 c.c. of water is added, and the whole evaporated to 1,000 c.c. The time required is 7 hours, but can be shortened to $3\frac{1}{2}$ by increasing the amount of formalin to 1,500 c.c.

The addition of water enhances the disinfecting power of the formalin. To neutralize the vapor after the disinfection is over, Flügge employs ammonia in the following manner: Outside the door is placed a hermetically closed vessel with a small pipe for the attachment of a piece of rubber tubing, the other end of which passes through the keyhole, or any other suitable opening, into the room. The vessel is filled with 800 c.c. of ammonia (25%) for each 100 cm. of space, and the latter is evaporated for 20 minutes, when the heat is removed and the ammonia allowed to evaporate for 30 minutes more. The doors and windows are then opened, to allow the exit of the excess of ammonia. The entire procedure takes from $5\frac{1}{2}$ to 9 hours, and the cost of the material is about \$1. Experiments proved that this method is quite efficient in cases of scarlet fever, diphtheria, tuberculosis, measles and influenza.

SURGERY.

UNDER THE CHARGE OF

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The Surgical Treatment of Neuralgias. Daudois (*Bull. de l'Acad. Roy. de Méd. de Belgique*, Tome XII., No. 10), after dealing with the anatomico-pathologic relations of the nerves that are the most common seat of neuralgia, says: "The seat of the neuralgia is almost always the ganglion from which the nerve originates; radical treatment and relief can only be secured by removing it. If sections and resections produce results, it is because they produce a reaction in the ganglion. This reaction is generally temporary, the ganglion and the fibers of the nerve that remain recovering, the pathological condition formerly present returning, and a second operation being necessary for a radical cure. Since the reaction is independent of the amount of traumatism, simple resections are better than excisions, as the peripheral portion of the nerve remains and ulterior interventions are easier. For the same reason, it is not essential to operate upon the trunk of the nerve, the reaction and effect on the pain can be produced by acting on the peripheral terminations. The action may even be on another nerve trunk that originates from the same ganglion. This possibility makes the removal of the ganglion unnecessary; it is a delicate and dangerous operation in many cases. A series of operations on peripheral fibers of various nerves arising from the same ganglion will produce repeated reactions and relief, rendering the removal of the ganglion itself unnecessary."

Perforating Gastric Ulcers. Furner (*The Lancet*, Dec. 31, 1898) reports three very noteworthy cases of gastric ulcer, in which operation was performed for the closure of the perforation. Two of the three cases recovered completely, although serious complications were present in all. The first patient died with a persisting gastric fistula, worn out with hectic and unable to retain food or regain strength. The second patient did well for a time, but the recovery was complicated by the formation of a pleural effusion, the patient recovering after its removal. The third case is of special interest, as it exemplifies a new method of treating severe recurrent hemorrhage from gastric ulcers. Hemorrhage after operation, excluding other causes, may proceed from the ulcer which perforated and has been closed from injury during the operation to a previously healthy portion of the stomach, or from a second ulcer coexistent. Statistics tell us that about 3% of cases of gastric ulcer die from hemorrhage and that

about $6\frac{1}{2}\%$ of all cases perforate. The occurrence of 2 ulcers opposite to each other on the anterior and posterior surfaces of the stomach was found in 13% of cases, the former being the site of the perforation, while the latter was in most instances firmly adherent to the pancreas. In the more recent cases where operation has been resorted to, out of 18 cases operated upon, 3 had ulcers on the posterior wall as well, with their bases formed by the pancreas; 2 others had an ulcer on the posterior wall only through the mucous membrane, and in one case a perforation occurred in an ulcer on the posterior surface after the anterior one had been sewn up. In this list of all the cases operated upon $\frac{1}{3}$ of the number had double ulcers. But whether a second ulcer is present or not, if grave symptoms such as perforation or hemorrhage arise, the necessity for treatment is urgent whatever be the cause. A second perforation can be treated by operation. There is, however, sometimes difficulty in deciding positively that a perforation has taken place; cases are reported in which the symptoms indicated perforation, but none was found. Hemorrhage has been treated by operation, but the successes have not been numerous. In the author's third case treatment by drugs and nutrient enemata had been of no avail; they could no longer be retained. The author in his case performed a temporary enterostomy. The operation is comparatively slight, and can be borne by a weak patient. The bowel was opened a meter below its commencement and a tube inserted, through which peptonized foods were introduced. The intestine should be attached to the parietes to prevent the forming of a spur that will preclude the passage of food when feeding commences by the mouth. The case reported by the author recovered after all other known methods had failed to keep up the strength till the hemorrhage ceased.

The Employment of Hypnotic State to Produce Analgesia.

Dr. Paul Joire (*Bull. Soc. Cent. de Med.*, Oct., 1898) discusses under this head the subject of hypnotism and its value in pregnancy. Braid, one of the first workers in this field, himself suggested the use of the hypnotic state for the performance of surgical operations painlessly. Esdile, a contemporary of Braid, performed the first operation painlessly in 1845. This was before the day of anesthesia by ether or chloroform. Says Bérillon: "Though the principles of hypnotism are apparently simple, we ought no more think of improvising a physician hypnotizer than of improvising a physician oculist." He would have it a specialty. Among cases where good results are produced, none are more satisfactory than cases of labor. The age, the sex, the nervous state of the patient are all points in favor of an easy production of the hypnotic condition. Even before labor, it is of advantage in the treatment of the following symptoms—nausea, vomiting, perverted appetite, neuralgias. The two forms of hypnosis employed are somnambulism and lethargy. Lethargy is a profound state of somnambulism. Somnambulism is often of more value than lethargy, as patients in it are susceptible to suggestion. Employed in labor, it causes the pain of the uterine contractions to disappear without interfering with the efficiency.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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A Case of True Aprosexia without Complicating Impairment of Hearing (Un cas d'aproxexie pure sans complication du cote de l'acuite auditive). Guye (*Ann. des. mal. du Larynx, etc.*, Feb., 1899) proposed nasal aprosexia in 1887 as a term to designate cerebral inactivity, an inability to fix the attention on a given subject, due to nasal lesion. He explained the condition by the interference in the circulation of the cerebral lymph by the lymphatics of the nasal mucosa. Others, among them Titeff, have offered another solution: "Nasal aprosexia, which had better be called auditory, is due without doubt to a lessening of auditory acuteness, the direct consequence of the impairment of the sense of hearing." The nasal causes (stenosis, adenoid vegetations) are, moreover, the factors of the ear troubles. This coincidence does not prove that aprosexia is auditory. The author reports a case of a boy of eight years with aprosexia, in whom hearing is normally acute. His mentality had developed rapidly, his memory improved after removal of adenoid vegetations and intranasal treatment. There is an independence from an etiologic standpoint of aprosexia and deafness, as can be seen in children somewhat deaf, who do not suffer at all from aprosexia.—(*Rev. Hebdom. de Laryngol., etc.*, Vol. XX., No. 15, De la Combe.)

The Connection between Hypistaphyly and Leptoprosopy (Ueber die Beziehungen der Hypistaphylie zur Leptoprosopie). Grossheintz (*Thèse de Bale*, 1898), having discussed the different theories whose object is to explain the formation of hypistaphyly (high arched palate), especially criticises that which makes hypistaphyly depend on defective nasal respiration. Assuming the opinion of Siebenmann, that a palate with high arch is found narrow in certain classes of skulls, the author examined a number, using the palatimeter of Siebenmann. Discarding the procedure of the Craniometric Commission of Frankfort, Grossheintz measured the width of the palate in the frontal plane between the second premolars. The result of his measurements follow: (1) To a palate narrow and high (hypistaphyly) corresponds a generally narrow formation of the upper half of the face (leptoprosopy). (2) Narrow nasal fosse (leptorhiny) and narrow orbits correspond to a variety of skull with high domed palate. (3) Hypistaphyly depends, in general, on cranial peculiarities in certain races and not upon the action of nasal stenosis produced after birth.—(Abstracted by Jankelevitch in *Rev. Hebdom. de Laryngol., etc.*, Vol. XX., No. 13.) [That cranial peculiarity is heredi-

tary cannot be gainsaid. The narrow, slit-like nasal orifices are sometimes seen in every member of a family. Nevertheless, with nasal obstruction, due to whatever cause, there is a certain amount of cranial moulding done after birth. By its efforts to open the nasal orifices the child draws down the facial muscles in a sort of sniffing, thus narrowing the arch and crowding the teeth, a process aided by the open mouth and dependent jaw, not to mention lack of development in the suprapalatal structures whose growth tends to flatten the arch.—Ed.]

Chronic Postnasal Catarrh Hawley (*Laryngoscope*, April, 1899), after mentioning the etiology and symptoms of this affection, reviews the treatment, special stress being laid on the fact that in the majority of instances medicaments fail to reach the nasopharynx in *spray* form. The spray is wasted in the nose or pharynx, "becoming a stream which flows along the inferior meatus until it either falls into the pharynx or by the aid of the soft palate passes into the adjacent nostril." Spraying back of the soft palate is limited by the gagging induced by the procedure. He describes an instrument that can be inserted through the nostril, no matter how small, until it reaches the postnasal space, where the full force of the spray can be employed, directly and forcibly. The strength and amount used can be regulated by a set screw at the head of the apparatus.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Dacryocystitis in Infants. Valude. (*Gaz. des Hop.*, Mar. 23, 1899) says that dacryocystitis of infants is not solely dependent upon prolongation of the fetal occlusion of the nasal duct, but may have the same causes as in adults. The medical treatment consists in instillations of feeble collyria of zinc sulphate and silver nitrate, together with repeated evacuations of the lacrimal sac by pressure at the internal canthus. If the case resists this treatment, it is likely due to congenital imperforation of the nasal duct, and he then passes a number one Bowman sound, without slitting the canaliculus. If the trouble still persists, he slits the canaliculus and passes a number two, and exceptionally a number three, Bowman sound. Often general anesthesia is necessary. The treatment is augmented by repeated antiseptic irrigations by means of the suel syringe.

Synovitis Associated with Interstitial Keratitis. J. W. Stokes (*Scot. Med. Jour.*, Apr., 1899) recalls attention to a peculiar form of synovitis, often associated with interstitial keratitis. As long ago as 1860, Hutchinson mentions a case. In 1886 Clutton published 11 cases of bilateral synovitis of the knee in cases of keratitis. Ten years before, how-

ever, Förster had drawn attention to the close clinical connection between congenital syphilis and this form of synovitis, as well as demonstrating the non-rheumatic nature of the latter. The disease of the joints is characterized by the following points: The knees are the joints almost always affected, and it is invariably bilateral, though both knees may not be found to be affected simultaneously, as the effusion often occurs in one before the other at a variable interval. A passive effusion of fluid takes place into the joint, which becomes considerably enlarged, but the distension is never so great as to make it tense, nor is there any hyperemia of the neighboring skin; the joint retains free mobility, and is painless. The affection is very chronic, lasting from three to twelve months. No thickening of the synovial membrane itself occurs, nor is there any disease of the neighboring bones, and it is not to be confounded with epiphysitis or with gummatous infiltration of the joint. The disease of the eye is the well-known interstitial keratitis, which is likewise bilateral and very chronic, and consists of a ground-glass opacity, commencing in the deep layers of the true cornea at its margin, and travelling inward toward the centre, the whole cornea becoming more or less opaque, and finally clearing up again from its margin. In severe cases iritis and choroiditis are nearly always present, the disease, strictly speaking, being one of the uveal tract to which the deep layers of the cornea belong. Of this disease Hutchinson at one time said that the existence of it alone justified the diagnosis of congenital syphilis; this, however, has been shown not to be strictly correct, the statistics of a number of observations giving 60 to 70 % as syphilitic in their origin, the causation of the remainder being put down to malnutrition, anemia and other debilitating affections. In 30 consecutive cases of interstitial keratitis observed by Stokes, 3 showed the above form of synovitis, in two case in both knees, and in one in the left knee. The patients were females, aged 11, 17, and 23 years. The natural inference is that the two affections are manifestations of the same disease, *i.e.*, congenital syphilis; although the keratitis is not always syphilitic in origin, and C. Thompson has published notes of a case in which the patient had both affections limited to the same side of the body, and in which not the slightest taint of syphilis could be demonstrated either in the patient or in members of her family.

The Microscopic Diagnosis of Trachoma. Snyder (*Medicine*, Apr., 1899) states that the classification of trachoma has hitherto been so loose and uncertain as to render definite lines uncertain. Any form of follicular inflammation of the conjunctiva which resisted treatment and persisted for any length of time has been regarded as a form of this disease. Snyder claims the etiologic factor of trachoma is constant, and its recognition only assures us of an accurate, certain and scientific diagnosis. In this view, he is not supported as yet, although his previous paper is receiving marked attention. According to Snyder, trachoma is due to a capsulated diplococcus, $1\frac{1}{2}$ to $2\ \mu$ in length and $5\ \mu$ in breadth, which is not decolorized by the Gram method of staining, and whose septum at times has an affinity for anilin stain, causing the diplococcus to simulate a bacillus. This organism is constantly present in the trachoma follicle and

secretions, before astringent and antiseptic remedies have been employed. It is easily differentiated from all other germs, as none other answers to its description. The method employed in suspected cases of trachoma is briefly as follows: When enlarged follicles are found, one of these is expressed and its contents employed. If there are no follicles, the secretions can be examined, though these are very unsatisfactory. The expressed follicular contents are spread thinly and evenly over four cover-glasses; two of these are fixed ten minutes in absolute alcohol, two are fixed in a flame. One of each kind is now put through the ordinary Gram method of staining. The other two are stained according to the Gram-Weigert method, lithium carmine being employed as the counter-stain. In this way four slides are prepared by slightly different methods, whose results should coincide. Where lithium carmine is employed as a counter-stain the bacteria are shown as a deep violet on a bright carmine background. As the bacteria are very minute, and at times scarce, it may be necessary to search a number of fields. Owing to the affinity of the septum between the diplococci for anilin stains, some of them simulate bacilli. Around a few of them the gelatinous capsule may be seen faintly. The heavily stained elliptical bodies are cells, repeatedly observed within the trachoma nodule, which resemble myelocytes.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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The Importance of Sulphur Springs in the Treatment of Syphilis. Bondarenko (*Russki Med. Viest.*, Vol. I., No. 6) has endeavored to solve the moot point about the value of sulphur baths as a specific. According to his observations, an adult taking a sulphur bath of 120 liters for 30 minutes will absorb through the skin about 336 c.c. of sulphuretted hydrogen, provided the water contained 7.5 mg. of the latter to the liter. Any quantity of H_2S above that will have no effect on the absorptive power of the skin; in other words, no more will be absorbed if the water contains as high as 33 mg. to the liter. Such a quantity, the author believes, is quite sufficient for therapeutic purposes. The sulphuretted hydrogen acts on syphilitics as an excitant. In cases where the syphilitic virus is latent, and

not accompanied by the usual manifestation, a sulphur bath will awaken the dormant poison to activity, and the picture of acute syphilitic infection will be produced. The further action of the baths is curative. The virus, no more able to withstand the action of the sulphuretted hydrogen, gradually dies out; the increased metabolism brought about favoring the resorption of the affected tissue and the elimination of the poisonous material. The author therefore recommends the use of the baths as the only initial treatment of syphilis. This will often clear up a diagnosis of syphilis by first aggravating the affection. To test the efficacy of the baths as a curative method, he has treated 81 inmates of a special sanitarium by this method alone. The patients received for the first week daily baths, and were taking the sulphur water internally in amounts varying from 300 to 1,200 c.c. daily. These observations led to the following conclusions: In some cases the sulphur baths are useful to bring out latent infection. Slight forms of syphilides can be cured by this method alone. When used in connection with the mixed treatment, it enhances the effect of the latter. It favors rapid elimination of mercury from the organism. It also favors absorption of old syphilides. The continuous (for 20 to 30 days) internal use of the water, in amounts of 300 c.c. daily, will increase the appetite nutrition and body-weight. Larger doses (1,000-1,200 c.c.) will diminish the appetite and body-weight. For therapeutic purposes the dose need not be larger than 300-500 c.c. A. R.

Diagnosis and Treatment of Rupture of Bladder. Thorndike (*Jour. Cut. and Gen.-Urin. Dis.*, May, 1899) reports 4 cases of extra-peritoneal rupture of bladder, with 1 death and 2 fatal cases of intra-peritoneal vesical rupture. The injection of a measured quantity of liquid, through a soft catheter, into the empty bladder, followed by the measurement of the return fluid, he considers the most reliable diagnostic sign of intra-peritoneal rupture. He summarizes as follows: "Immediate operation should be performed in all cases where a rupture is known to exist. In all intra-peritoneal cases immediate laparotomy should be performed and the wound in the bladder sewed up. In all cases where there is any doubt as to whether the rupture is extra- or intra-peritoneal, immediate laparotomy should be performed. In all extra-peritoneal cases where there is any doubt as to the direction and extent of the extravasation, laparotomy should be performed at once for exploration and diagnosis, and should be followed by the operation appropriate for the drainage of the case."

A Simple Method of Determining the Presence of Bromids in the Urine. Jolles has devised the following method: Dimethyl phenylen-diamin test paper is prepared by immersing filter paper in 0.1% sol. of the indicator; 10 c.c. of urine are acidified by sulphuric acid and permanganate of potash added until a permanent red color is produced. The mixture is then warmed over a water bath, and a wet piece of the test paper held over the vapor. If the least trace of bromine is present the test paper will turn red-violet.

GYNECOLOGY.

UNDER THE CHARGE OF

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The Present Position of the Question of Operation in Uterine Fibroids. Bishop, of Manchester, Eng. (*Lancet*, Jan. 28, 1899), says the majority of the profession believe, first, that fibroids are not fatal if left alone; second, fibroids can be made to shrink by the use of ergot and similar drugs; third, fibroids naturally tend to disappear at the menopause; fourth, surgical interference, if it is to be effective, imports extreme risk to life. The relative value of the first three depends largely upon the amount of force which attaches to the fourth. The latter was certainly true in the preaseptic days, so much so that it was only in the rarest cases that a serious operation was instituted. To obviate its necessity, Tait advocated removal of the ovaries, which in 262 cases he did, with 4 deaths. This mortality was low enough to justify the procedure, providing it accomplished the purpose, but it was found that some cases continued to bleed after the total removal of ovarian and tubal tissue. According to Johnson, in at least 10% it failed to accomplish relief. This was particularly true in the class of fibro-cystic tumors. It was further objected that the removal of organs which, like other ductless glands, exerted an influence essential to the general equilibrium, produced unpleasant phenomena without being certain to secure the desired result. Myomectomy, or the removal of the fibroids *per se*, was next advocated. In this operation great difficulty was experienced in closure of the uterine wound. The uterine tissue is extremely difficult to suture satisfactorily. It contracts and dilates. A suture which at one time is firm, at another may be loosened. The operation was attended with difficulty where a number of fibroids occupy the wall, though Alexander, of Liverpool, advocated the removal of multiple fibroids through the single opening. It is not always certain that such growths would not return in a uterus which was predisposed to fibroid degeneration. Engstrom reported in 1896, 100 cases with 5 deaths. In 37 cases there were multiple tumors (from 2 to 5). In one case there were 22 tumors. In 3 patients there was return, or fresh growths developed. Martin reported 113 cases with but 3 relapses. The next procedure was the removal of the uterus, leaving the ovaries and tubes behind if healthy. This followed the same course as in ovariectomy. The uterus was delivered through the abdominal opening, its base encircled by a wire *serre-noeud*, and the main bulk of the tumor cut away, leaving the neck of the uterus as a pedicle secured by the clamp. The pedicle became adherent to the

abdominal wall. There was a prolonged and dangerous period of separation of the stump which afterwards dragged upon the pelvic and abdominal tissues, also danger of inclusion of some portion of the bladder, or the ureters in the *serre-noeud*. Secondary hemorrhage occasionally occurred, and the operation was not applicable to tumors in the broad ligament. Efforts were naturally made to accomplish the intraperitoneal treatment of the stump. Schroeder was the original advocate. Occasionally intraperitoneal hemorrhage with fatal result or suppuration and formation of pus which had to be evacuated discouraged the procedure. Byford removed the supra-cervical portion of the uterus, made an opening in Douglas' pouch and dragged the stump through into the vagina. The lining of the uterine cavity was destroyed in many ways, by strong carbolic acid, the actual cautery or electro cautery. Pan-hysterectomy found its advocates by two routes—the abdominal and vaginal. A combination of both is sometimes practiced. Kelly reports 100 cases with 2 deaths; Bantock 7 cases with 1 death; Christopher Martin 10 cases, 1 death; Doyen 35 cases with a single death. The operation has been modified by different men, the ultimate intention in all being to entirely remove the affected uterus, leaving tubes and ovaries unless irremediably diseased. Advantages of the operation are the total removal of the fibroid uterus, relief from the exhausting hemorrhage, sense of weight and discomfort, pressure upon the bladder, and rectum, pressure upon the sacral and lumbar nerves, obstruction to the free circulation of the lower extremities, and nothing is left behind to act as a fresh nidus for growth or suppuration, while the all important ovarian tissue may be undisturbed. The cardinal objection is that all possibility of pregnancy is removed. This applies to all operations for the supravaginal removal of the uterus, but is not a valid objection, for the reason that but few of these cases become pregnant. Of those who do so, the great majority suffer from obstruction or difficulty during the progress of the labor. The mortality of the mothers in such complication is 53% and the child 66%, so that one-half the mothers and two-thirds of the children die. The danger in pregnancy can be readily understood. Abortion is frequent, and the fibroid uterus contracts with difficulty and imperfectly. There is great danger of clot or portions of decidua with consequent septic poisoning. Should the pregnancy reach the normal period, the dangers of parturition are great. A tumor in the broad ligament is an insurmountable obstacle to the passage of the child. Caesarean section may be required. Sometimes the tumor can be passed with the forceps, but then it is so bruised that it may become gangrenous. The placenta may be inserted over the region of the fibroid and furious hemorrhage occur during and after its separation. Owing to the inability of the part to contract, the comparison of the mortality in these cases with that of pan-hysterectomy is very greatly in favor of the latter. The danger to the patient, the decreased mortality over the operation and the discomfort and distress which the patient must experience, who is the victim of such a condition, with constant, profuse bleeding, with danger of secondary changes, such as fatty degeneration of the heart muscle, gangrene or sloughing of the tumor, torsion, its malignant alteration, compression of the

neighboring organs, all emphasize the importance of operation. As the danger of operation is increased with the increase in size of the tumor, the patient should be advised to have the tumor removed at an early date.

OBSTETRICS.

UNDER THE CHARGE OF

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The Treatment of Eclampsia by Infusion of Salt Solution. Allen (*Amer. Jour. of Obstet.*, May, 1899) reports three cases treated by this method with recovery. All were seen after convulsions had set in. Accouchment forcé, bleeding, and salt solution injected under the mammae repeatedly, coupled with the other usual remedies, except veratrum viride, constituted the treatment. The author thinks that the poison is probably of placental origin and is kept diluted and eliminated by the above measures with better results than otherwise.

A Convenient Technique for the Delivery of the Aftercoming Head where Gross Disproportion Exists. Stahl (*Am. Jour. of Obstet.*, Apr., 1899) reports an emergency case of hydrocephalus, breech presentation. With no instruments at hand but a pair of scissors, he decapitated, turned the head, punctured and evacuated through the vertex and delivered manually. The patient made an uneventful recovery. The various methods advocated are compared, and he presents the great advantages and ease of this procedure as compared to the others. The time of operation was 15 minutes.

New Method of Inducing Premature Labor. Spinelli (*Arch. Ital. di Gin.*, Dec., 1898) claims that his method can be performed by the general practitioner; no especial instruments are necessary, and it starts labor in two or three hours with no danger. The patient being prepared for operation, the posterior lip of the cervix is seized and the cervix dilated with a dilator (if necessary) to admit one finger. The finger is crooked and carried up until the membranes are detached from posterior surface. A yard of gauze saturated in 10% ammonium ichthyolate and glycerin is then passed up on the finger and digitally pushed up higher and higher, care being taken not to rupture the membranes. Nearly the whole of the gauze can be introduced. The vagina should be plugged with sterile gauze and the patient put to bed. Pains begin very soon after the introduction of the gauze, and labor comes on rapidly.

Local Treatment of Intrauterine Sepsis. Groves (*Can. Pract.*, March, 1899) reports four cases treated by injecting uterine cavity with tincture ferri perchloridi after removing fragments with finger nail and irrigating. No curette is used. The treatment should be repeated if necessary every 30 hours. The iron is antiseptic, it seals up all absorbents and stimulates the uterus to contract.

The Influence of Menstruation on Lactation. Burdix's (*Wien. Mediz. Blatt*, No. 42, 1898) observations were made upon 140 cases. A large number of analyses were made before, during, and after menstruation to determine the amount of sugar, albumin, ash, fat, etc., in the milk. His results are that 60% of women menstruate during the lactation period. The occurrence of menstruation is rarely a cause for removing the child from the breast. Quantitative changes in the milk were rare. The only qualitative change was in the amount of fat. In a very small proportion of cases was there any effect upon the infant. He concludes that the child should never be taken from the breast for the sole reason of menstruation, and that there is no truth in the statement that the child who nurses from a menstruating mother will become rachitic.

Tetanus Following Criminal Abortion. Dawson (*Louisville Med. Mo.*, Dec., 1898) reports following: Patient 28 years old, 3 para. Mid-wife induced abortion at five months by introducing a catheter into uterus and leaving it. The patient did well until the fourth day, when stiffness of the jaw and neck occurred. Temperature, $102\frac{1}{2}^{\circ}$; uterus tender, with a muco-purulent and very offensive discharge. The rigidity rapidly extended to the trunk and extremities and the patient died on the sixth day, after numerous convulsions, in spite of all treatment.

Dystocia from Contraction of Bandl's Ring. Bué (*L'Obstetrique*, Jan., 1899) states that this condition was formerly thought to be a contraction of the internal os. A Porro operation is sometimes necessary when all other means fail, the author having seen two such cases; both were neglected shoulder presentations. Version is frequently impossible when this condition exists. A case is described in which the hand was protruding from the vagina, and a hand passed into the uterus found Bandl's ring strongly contracted around the arm, although the remainder of the uterus was relaxed. After great difficulty the hand was introduced and finally a foot was brought down, but the child could not be turned on account of the firm contraction of the ring around both the arm and the leg. Further dilatation of the ring and pushing the arm upward finally overcame the difficulty. The cause of the dystocia is easily diagnosed by the touch.

Salt Solution in Sepsis after Abortion. Ostermayer (*Cent'bl. für Gynaekol.*, No. 12, 1899). The patient was nearly in extremis with a sub-normal temperature, and a fatal termination seemed certain. On account of the favorable reports of Eberhart, the writer was induced to try

this remedy. Normal salt solution was injected twice daily in the loose connective tissues and was persisted in for a number of days with a noticeable improvement, and eventually saved the case.

Orexine in the Vomiting of Pregnancy. Hermann (*Therap. Monat.*, Jan., 1899), in 9 cases of severe vomiting of pregnancy, was successful in each on administering four grains of orexine three times daily.

Albuminuria During Pregnancy without Convulsion in the Mother; Eclampsia Present in the Child. Kreuzmann (*Der Frauenarzt*, Mar. 3, 1899) reports that the child was healthy at birth but 36 hours afterwards convulsions appeared suddenly. The mother had albuminuria and edema during her pregnancy but no eclampsia. Kreuzmann advances the idea that the child received the toxic element from the colostrum during the elimination following the labor.

The 55th Annual Meeting of the American Medico-Psychological Associat'n occurred in the Waldorf-Astoria, New York, May 23, 24, 25 and 26, 1899. The officers of the Association are: President, Henry M. Hurd, M.D.; Secretary and Treasurer, C. B. Burr, M.D. The program included addresses of welcome by Bishop Potter and E. G. Janeway, M.D., and papers by various physicians, including Sanger Brown, J. B. Chapin, Frederick Peterson, William Mabon, W. L. Babcock, G. Alder Blumer, Ira Van Gieson, and others.

The Value of Dust. E. W. McGann (N. J. Section of *Climate and Crop Service of the Weather Bureau* for April, 1899) says: "The majority of persons do not know that the sky is blue on account of the thousands and thousands of millions of atoms of dust floating in the atmosphere. Were it not for dust we would lack light on mother earth, and the heavens would be an inky black. Suppose a room absolutely dark, save a hole through one of the shutters. A ray of light will dart through the small opening, and one can observe tiny particles of dust dancing in that bright beam of light. As a matter of fact it is not the light we see, but simply a reflection, caused by these motes of dust. As it is with this shaft of light in the darkened room, so it is on a large scale throughout the air. The many millions of particles of dust catch the light, reflecting it back and forth from one to another, so making the atmosphere luminous. It is for this reason that, were it not for the dust, the sky would appear black, as it does at night when there is no moon. The sun would appear as an immense glowing ball. The moon and stars would be visible throughout the day. Everything would appear different. Where the light touched, the eyes would be dazzled by the brilliancy. The mellow softness of the shadows would become an intense black, and the outline of objects harsh and angular."

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To make medicine an exact science like mathematics, we should need to know much more than is now possible. (1) We should need to know the exact pathologic condition, idiosyncrasies and tendencies, hereditary and acquired, not only of every patient in a general way, but of every organ in every patient. (2) It would be necessary to understand, far more accurately than any one now does, the effects of the various articles of food and drink upon the different organs of the body, both in health and disease, and this not only generally, but for each patient individually; for it is to a great extent true that what is one man's meat is another man's poison; and if these were all determined, there would remain the difficult practical problem of having the prescribed food properly prepared and eaten as directed. (3) It would be indispensable to know the effects not merely upon certain animals in health of all the drugs used by us, but also their effects upon every organ of the body of man, both in health and disease. Nay, more, it would be necessary to know all the idiosyncrasies and eccentricities of the particular patient under treatment in his reaction to the drugs used. Then the behavior of a case is often immensely influenced by the climatic conditions, the modes of dress, occupation, and social environment, and the effects of none of these have yet been exhaustively studied.

To come down to concrete instances, occurring every day in practice: How often does the physician who prescribes an alkalin drug or mineral water, know whether it is going into a stomach which, by reason of its excessive secretion of hydrochloric acid, requires such a remedy, or into one which, as a result of either chronic gastric catarrh or constitutional debility and depressing emotions, is lacking in the normal acid secretion, even though excessive fermentation has produced sour eructations with the customary long train of antitoxic symptoms? How often, when we give a routine prescription for constipation, do we stop to consider whether any of its ingredients will react favorably or unfavorably upon existing disease in the heart, stomach, liver, kidneys or rectum?

While it will manifestly be impossible ever to attain absolute perfection and exactness in our results, we ought to approach more and more nearly to this ideal goal, just as the parabolic curve approaches always a

straight line without ever becoming one. We can improve very much upon the results now usually accomplished by making more and more thorough examinations and more and more exact diagnoses, as well as by taking care not to prescribe a combination of active drugs, many of whose powers are little understood, when one or two simple remedies would effect the desired result.

In England and America much less use is made of hypnotism in the treatment of nervous disease, vicious habits, etc., than on the continent of Europe. The reason for this is not entirely clear. It is certainly not for lack of nervous disease or of vicious habits, though in the latter respect we in the United States can make a far better showing than most of the older nations.

**Hypnotic Sug-
gestion in
Medicine.**

There is unquestionably among us a superabundance of misery-producing affections which are most difficult of cure—often quite intractable—under the customary methods of treatment, and yet, according to the evidence of some eminent neurologists experienced in the therapeutic application of that uncanny art, quite amenable to treatment by hypnotic suggestion.

Perhaps it is just the uncanny flavor about hypnotism which makes most American physicians hesitate to meddle with it. The public in this country has come to regard it with mingled feelings of curiosity, suspicion and fear; and in most communities a physician known to possess, in an exceptional degree, what the public look upon as the mysterious and possibly mischievous power of inducing the hypnotic state, would run even more than the usual risk of defamatory accusations and attempts at blackmail. Indeed, Prof. Dercum, in his interesting lecture upon this subject, which appeared in the May number of the *INTERNATIONAL*, very wisely advised that no physician should ever practice hypnotism except in the presence of at least one witness of the same sex as the patient. Dercum does not think this method of treatment has much practical value, though admitting its occasional efficacy, and in this conservative view he is probably in accord with the majority of American neurologists, though the preponderance of opinion among nerve specialists in France and Austria, at least, would seem to be in favor of its employment in certain stubborn so-called functional nervous affections, in aberrations of the sexual instinct and in the drug habits.

The fact that neurologists are at variance with regard to the usefulness of hypnotism was strikingly exemplified by a discussion upon the subject which took place recently in the Philadelphia County Medical Society. Prof. John Madison Taylor read a paper in which he strongly advocated it, while Mills, Dercum and other distinguished specialists criticised his position, maintaining that hypnotism may be hurtful to the patient, while equally good effects can often be obtained by suggestions impressed forcibly and earnestly in the waking state. There are admittedly, however, con-

ditions in which the most positive and oft-repeated suggestions fail of effect under ordinary conditions and yet succeed perfectly under hypnosis.

Taylor emphasized this fact clearly in his paper. On this point he said:

"Why, then, is a person influenced more powerfully under hypnotism than in the normal state of attention? It is to be hoped this question shall be answered by psychologists in such fashion that the physician can comprehend and use it. My own impression is that whereas in the every-day state of a person who seeks medical advice and who avowedly listens to our counsel, many factors enter into and impair the attitude of attention and acquiescence they vouchsafe both as to degree and kind. The human ear is presumably devised as an avenue of information and conviction to the brain and consciousness; but too often it seems only to fulfil the purpose of listening for a pause in the flow of admonition, so that the tongue of the petitioner may secure an opportunity to give itself voice for reply. The normal state of consciousness is complicated by many disturbing factors, some normal, such as are caused by many varying phases in the life of relation; some abnormal, such as outgrow from vicious mental habits (which invariably exist in all prolonged instances of ill-health); some are due to the inherent faults of our symmetrical powers and development in the higher intellectual planes. If this foggy atmosphere can be removed, allowing of a direct relationship, rapport, between the subject and suggester, a more perfect impress can be made upon the receptive faculties, the latent powers of thought, action, or control can be awakened, strengthened, or guided."

There is a large amount of testimony from very eminent authorities abroad, which fully corroborates Dr. Taylor's claim that insomnia can often be overcome by hypnotic suggestion more readily and less harmfully than by drugs; and that chronic addiction to alcohol, opium, cocain, etc., can sometimes be cured in this way when other means have signally failed. Evidently, there is some real value in the method, and, liable as it is to abuse in unworthy hands, we are inclined to believe that it affords one more useful, even if two-edged, weapon against many obstinate affections. Really helpful and reliable remedies in the conditions above mentioned are all too few, and those usually depended on often most disappointing. Let us not, then, too hastily condemn and discard any new ones which have been proved capable in skillful hands of restoring even a few afflicted human beings to health. Hypnotic suggestion seems to be worthy of further trial, notwithstanding that its employment may be inconvenient and even difficult, and involve possibilities of embarrassment to the physician himself.

It is the province of liberal and progressive medical journals to publish communications from reputable physicians representing all phases of opinion on questions of interest to the profession. It is in this impartial

Serum-Therapy.

spirit that we make room in the present number of the *INTERNATIONAL* for the article of Dr. W. Thornton Parker on "The Use of Normal Non-Immunized Serums." The subject of serum-therapy in its various bearings is one of great interest and im-

portance, and one which may be considered as having only just begun to be studied. It is a field which invites further patient research, and the work so far done in it scarcely yet warrants an attempt to draw many final conclusions.

It would seem to have been established, however, that the serum of healthy blood, both in man and animals, possesses a distinct antiseptic action, and even a bactericidal power with regard to numerous forms of micro-organisms. The full extent and limitations of this action, as well as all the conditions surrounding it, are by no means yet understood. On the other hand, ample evidence has been obtained from both the laboratory and the bedside to prove that under the stimulus of the toxins of certain diseases, such as that of diphtheria, tetanus, etc., when injected into the horse or ass, there is produced in its blood a something which increases markedly both the immunizing and antidotal power of the serum of the animals thus treated against the diseases in question. In view of the extraordinary decrease of the mortality from diphtheria under the antitoxin method of treatment, in all the great cities of the world where it has been faithfully carried out, it is now almost universally conceded that the method is valuable, and full of promise for the future.

EDITORIAL MENTION.

DR. WILLIAM J. MORTON, of New York, contributed to a recent number of the *Medical Record* a notable paper on the treatment of brachial and sciatic neuritis by electro-static currents. Eighty cases of these diseases are reported, thirty-seven of them with more or less fullness of detail, and the remainder in a tabular statement. All the cases were relieved of their pains and steadily improved while under treatment. Fifty-seven of them were known to have been definitely cured and the remainder were believed to have recovered, though positive information on this point was lacking at the time of making up the report. The average duration of treatment was twenty-two days for the cases of axillary and brachial neuritis and thirty-two days for the sciatic form. The maximum duration of treatment was forty-two and seventy-eight days respectively in the two forms of the disease. Among the cases fully detailed were many of several months' standing, and some in which the patient had been suffering for four or five years in spite of active treatment by able physicians. Dr. Morton, in accomplishing his remarkable results, gave no medicine at all or any other form of treatment except that by means of static electricity, which he has found to be appropriate and curative at all stages of this usually very stubborn affection.

THE ETIOLOGY OF CARCINOMA. Probably the most striking contribution to the recent "Cancer Number" (April, 1899) of the *Practitioner*, was that by Plimmer, upon the etiology and histology of cancer. In 1,130 out of 1,278 specimens of carcinoma, bodies supposed to be parasites belonging to the saccharomycetes were found. These bodies, which were found in greatest number in very actively growing tumors, were successfully cultivated on artificial media, and when injected into the peritoneal cavities of guinea pigs at times produced small endothelial growths which contained the parasites. Similar results have been reported by Sanfelice, Bra and others, but true carcinomatous growths have as yet not been produced. We hope to refer more fully to this interesting subject in a later number.

A GRATIFYING indication of the progress which the broad principles of medical science are making is found in the fact that fifteen homeopathic physicians, after a course of study at the Cleveland College of Physicians and Surgeons, took diplomas from that institution at its commencement on May 3d. The recent marvelous advances in medicine have left no room or even plausible excuse for sectarianism; and it is most encouraging that so many of our homeopathic brethren have the clearness of vision as well as the honesty to recognize the fact.

THE INTERNATIONAL'S innovation of attempting to give systematic instruction in the more important specialties by means of short, simple and practical lectures or talks to general practitioners, has proved eminently successful. The feature is a taking one and, as we learn from not a few readers, makes the journal indispensable to many ambitious physicians who are unable to get away for the purpose of studying the newer things at post-graduate schools. It is much more convenient, as well as vastly less expensive, to receive such instruction in monthly installments at home, while the practice goes on as usual. The only wonder is that no medical journal ever tried the plan before.

The American Electro-Therapeutic Association. The ninth annual meeting of the American Electro-Therapeutic Association will be held in Washington, D. C., on September 19, 20, and 21, 1899, under the presidency of Dr. F. B. Bishop, of Washington.

The Fourth International Congress for Dermatology and Syphilography. This congress will take place in Paris, August 9, 1900, in Hospital St. Louis. The thirteenth International Medical Congress, under the presidency of Prof. Lannelougue, will also take place at the same time in Paris, and the section of Dermatology and Syphilography of the latter will combine with the Dermatologic Congress.

BOOK-REVIEWS.

A REVIEW OF RECENT LEGAL DECISIONS AFFECTING PHYSICIANS, DENTISTS, DRUGGISTS AND THE PUBLIC HEALTH. TOGETHER WITH A BRIEF FOR THE PROSECUTION OF UNLICENSED PRACTITIONERS OF MEDICINE, DENTISTRY OR PHARMACY, WITH A PAPER UPON MANSLAUGHTER, CHRISTIAN SCIENCE AND THE LAW, AND OTHER MATTERS. By W. A. Purrington, of the New York Bar. New York, E. B. Treat & Co., 241-243 West 23d Street. Price, 50 cents. 1899.

The worst thing about this valuable little manual is its long and involved title, quoted above in full. However, we should be prepared to forgive much in this respect to the always verbose legal profession. Physicians are often in doubt regarding their legal rights, duties and privileges as professional men, and sometimes find themselves involuntary offenders through a want of knowledge. Naturally, the average physician cannot afford to retain counsel by the year, as corporations do, and yet needs some way of keeping himself informed concerning the laws affecting his profession. Mr. Purrington's summary of decisions admirably fills this want. Every medical practitioner should have it at hand.

ON THE ORIGIN AND PROGRESS OF RENAL SURGERY. With Special Reference to Stone in the Kidney and Ureter, and to the Surgical Treatment of Calculous Anuria. Being the Hunterian Lectures for 1898. Together with a Critical Examination of Subparietal Injuries of the Ureter. By Henry Morris, M.A., M.B. Lond., F.R.C.S. Philadelphia, P. Blakiston's Son & Co. 1898. 8vo, pp. 288.

This work, though dealing with only certain phases of renal disease as viewed from the surgical standpoint, nevertheless epitomizes the progress in renal surgery in such clear-cut, concise and convincing language that no practitioner can afford to be without it. To the surgeon, it speaks with an authority that can only be based upon such a rich and varied experience as its author possesses. To the general practitioner, it shows how difficult the field is with which it deals, how valuable early diagnosis and intervention are in certain cases to his patient, and helps him to recognize and differentiate between the conditions that can be treated on general principles and those that need the early judgment of the trained diagnostician. A general diffusion of the knowledge it contains will certainly, if acted upon, lower the mortality from renal disease.

THE PRINCIPLES OF BACTERIOLOGY: A PRACTICAL MANUAL FOR STUDENTS AND PHYSICIANS. By A. C. Abbott, M.D., Professor of Hygiene, etc., University of Pennsylvania. Fifth edition, enlarged and thoroughly revised, with 109 illustrations. Philadelphia and New York, Lea Brothers & Co. 1899.

This excellent hand-book is meeting with well-deserved popularity and success. The fifth edition has been brought well up to date, so that its teachings are in full accord with the latest observations. The most noteworthy modifications and additions are in the chapters on technique, disinfection, and that on infection and immunity. The last is exceptionally full and satisfactory, considering the scope of the work.

OCULAR THERAPEUTICS FOR PHYSICIANS AND STUDENTS. By F. W. Max Ohlemann, M.D. Translated and edited by Charles A. Oliver, A.M., M.D. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. Price, cloth, \$1.75. 1899.

As in the recent work of Landolt and Gyrax the aim of this book is to treat exclusively of the remedial agents used in ophthalmology. In the former work the affections, drugs, and other remedial agents are dealt with very briefly in alphabetic order. In Ohlemann's work, the arrangement is more systematic and thorough and follows the lines of general treatments and special diseases, with an extensive cross-index for the various diseases, drugs, and authors quoted. The first or general part of the work describes (1) Mechanical Treatment, (2) Thermic Agents, (3) Chemic Agents, (4) Electricity, and (5) General Treatment. Following comes the Special Part, under which is described the treatment of the various diseases in detail.

As it stands the book is of considerable practical value to American practitioners. Besides many general directions, over 200 formulae are mentioned. The editor-translator has done his prescribed work well, but we would rather have seen him take more liberty in his editing. The book would be much more valuable if preparations found exclusively in the German pharmacopeia were eliminated, the prescriptions written in English, and such popular American and British preparations as boroglycerid mentioned. Books exclusively continental are not as satisfactory as liberally revised and edited translations.

THE NATURE AND THE CONSEQUENCES OF ANOMALIES OF REFRACTION. By F. C. Donders, M.D., Late Professor of Physiology and Ophthalmology in the University of Utrecht. Revised and edited by Chas. A. Oliver, A.M., M.D., of Philadelphia. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. Price, \$1.25.

This beautiful little volume consists of an English translation from the Dutch of the celebrated aphorisms of the great master of physiologic optics—Donders. The editor has tried to preserve the original sense of the essay, and has in no way interpolated more modern ideas, yet it is astonishing to note the very small extent that the science of to-day differs from the views expressed in this unique brochure published over thirty years ago. Every scientific physician should possess this classic. We cannot pass the book by without expressing our gratitude at the patriotism of the editor and publisher in producing the work so handsomely in spite of the fact that the financial returns must be necessarily very limited.

ATLAS OF THE EXTERNAL DISEASES OF THE EYE. By Prof. Dr. O. Haab, of Zurich. Edited by G. E. de Schweinitz, A.M., M.D. With 76 colored plates and 6 engravings. Philadelphia, W. B. Saunders. Price, \$3. 1899.

This handsome volume is the latest one of Mr. Saunders' American edition of the celebrated "Lehmann Medicinische Handatanten." There are 40 colored plates, illustrating nearly all the commoner external diseases of the eye, together with a concise epitome of the diagnosis and treatment of the diseases depicted. The plates are very true to nature; in fact, with the exception of those in Ramsay's Atlas, we have never seen better ophthalmic colored illustrations. But the latter book sells for \$20, while Haab's Atlas is offered at the low price of \$3. At this figure it is placed within the reach of all, and it is the general practitioner, lacking sufficient clinical observation of eye-diseases, to whom these plates will be of most value.

THE READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By George Thomas Jackson, M.D., Professor of Dermatology in the Woman's Medical College of the New York Infirmary and in the Medical Department of the University of New York; Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York, etc. With 75 illustrations. Third edition, revised and enlarged. New York and Philadelphia, Lea Brothers & Co. 1899.

This is one of the sensible, practical books, the object of which is to instruct the busy physician and facilitate, as well as improve, the quality of his daily work, rather than to show off the erudition of the author. Hence its success and the necessity of a third edition within a comparatively short time for such a work. The numerous original and very graphic illustrations, the large collection of formulas in the appendix, as well as scattered throughout the book, and the clearly indicated pronounciation of all names of diseases, are features which are particularly useful to general practitioners.

DIAGNOSIS BY THE URINE; OR, THE PRACTICAL EXAMINATION OF URINE, WITH SPECIAL REFERENCE TO DIAGNOSIS. By Allard Memminger, M.D., Professor of Chemistry, Urinology and Hygiene in the Medical College of the State of South Carolina, etc. Second edition, enlarged and revised. With illustrations. Philadelphia, P. Blakiston's Son & Co. Price, \$1. 1899.

Among other additions to the second edition of this very condensed and in some respects useful little handbook of urinary examinations, there is a chapter entitled "Differential Diagnosis of Chronic Bright's Disease, Based on a Classification of the Normal Absolute, the Absolute and the Relative Absolute of Solids and Urea Found in Urine with Albumin and with or without Tube Casts." We had always supposed that urea itself was a solid; but there are other strikingly original views advanced in this rather top-heavy chapter.

PROGRESSIVE MEDICINE: A QUARTERLY DIGEST OF ADVANCES, DISCOVERIES, AND IMPROVEMENTS IN THE MEDICAL AND SURGICAL SCIENCES. Edited by Hobart Armory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, cloth, 490 pages, 28 illustrations and 3 colored plates. Philadelphia and New York, Lea Brothers & Co.

With the existing superabundance of "annuals" designed to furnish condensed summaries of the progress made each year in medicine, in addition to the reviews of medical progress in various journals, there would seem little room or *raison d'être* for a new venture in the same line. The publishers of this work, however, believed that a quarterly digest, which should both summarize and comment intelligently upon the current developments, discoveries, and advances in the science and art of medicine, would be helpful to physicians. It is true that, with the present tremendous activity in all the branches of medicine and its auxiliary sciences, in many of which even the terms describing the results of investigations are becoming more and more a foreign language to medical practitioners as well as to the workers in other special fields, there is need of much interpreting of findings and of directions as to how best they may be turned to practical account. In some of the best year-books this necessity is recognized. These contain numerous special articles, describing in language intelligible to all physicians the practical significance and bearing of the more important achievements in various fields of exceptional interest to clinicians. Still, a great amount of sifting is necessary to obtain the genuine

grains out of the mountains of chaff which the experimenters in all parts of the world are piling up every year, and "Progressive Medicine" promises to help effectually in doing this. Prof. Hare has surrounded himself with an able staff of writers, and the volume before us is entirely creditable in all ways.

VACCINATION: ITS NATURAL HISTORY AND PATHOLOGY. By Monekton Copeman, M.A., M.D. Cantab., M.R.C.P. Lond.; Inspector of her Majesty's Local Government Board; Lecturer on Health in the Medical School of Westminster Hospital, etc. New York, The Macmillan Co. Price, \$2.

At present one feels an urgent need of fortification against the numerous "antis" springing up here and there like mushrooms after a rain and threatening to upset the very foundation of our science. The "conscientious objector" in England, the antivaccination society in Germany, the embryo-antivaccinationist in this country and the tender-hearted antivivisectionist, make a formidable array which the scientific mind contemplates with apprehension. The only way to cope with these mental weaklings is by hard scientific facts, and the book before us is one that contains all the information necessary for the proper comprehension of vaccination. The author, a well-known scientist in England, presents no arguments either for or against vaccination; indeed, he apparently ignores that "society composed," as Liebermeister puts it, "of persons who might properly be called cranks with little knowledge of medicine and less of great historical movements, reinforced by certain physicians and quacks who are strangers to small-pox and small-pox epidemics, and absolutely incapable of weighing scientific evidence." The book is a collection of Milroy lectures for 1898 delivered before the Royal College of Physicians of London, and treats the subject from its scientific aspect entirely. But at the same time its very nature shifts the burden of proof, or rather disproof, on the shoulders of the antivaccinationists. In the introduction the author gives an interesting historical review of small-pox and its treatment, antedating the brilliant discovery of the immortal Jenner. He then relates the circumstances which led up to Jenner's discovery, and the historic and scientific data relating to that epoch-making period. In Chapter II. he reviews the relationship of variola and vaccinia, disproving the duality of these two affections and establishing the fact that cow-pox is variola modified by the transmission through the organism of the cow. Chapter III. contains the history of various lymph stocks and this is followed by the histology of the vaccine vesicle. Chapter V. is devoted to the bacteriology of vaccination. Here is given a detailed account of the numerous futile attempts made by the author and others to isolate the specific germ, and the various micro-organisms contained in the lymph are mentioned. In Chapter VI. the author describes his experiments of successful inoculation of a monkey with both small-pox and vaccinia, the manifestation of the two diseases differing only in the greater constitutional disturbance produced by the former. The protective power of either was also established by these experiments.

A thorough discussion of "antitoxin," "animal vaccination," and "glycerinated lymph" forms the contents of the following three chapters. The book ends with Appendix No. I. on the preparation and storage of glycerinated calf lymph, and Appendix No. II. on the bacteriology of vaccine lymph. To make it still more useful as a book of reference, the author has appended to each chapter a sufficiently complete bibliography. A number of excellent plates and photographs admirably complete this little volume, which, taken all in all, is a valuable addition to the physician's library.

PRACTICAL NOTES.

Ice Massage has recently been highly commended by William Ewart, of London. It is described as especially valuable in cases of rheumatoid arthritis, in pemphigus complicating painful joint affections, and for the pleuritic pain accompanying acute pneumonia. The pain is markedly, and at times permanently relieved. The application is by gently rubbing the affected part with a small block of ice grasped in the flannel-protected hand, the duration and frequency of the application being modified according to the character of the case and the relief afforded.

The Treatment of Chronic Articular Rheumatism. Hirschkon (*Wein. Med. Blatter* 98, No. 52) gives a short account of internal and external therapeutic methods useful in chronic articular rheumatism, and then devotes himself to the consideration of the topical use of naphthalin, which he has employed in 20 cases. The naphthalin is merely laid over the affected joint and covered with several folds of linen, the application being renewed twice daily. He claims for naphthalin a vascular excitant action, an absorptive influence upon old and torpid exudates, and a remarkable sedative effect upon the painful rheumatic nodes.

Diet in Acute Gastro-Intestinal Catarrh of Infants. Dr. W. Soltau Fenwick, of London, in his recent work entitled "Disorders of Digestion in Infancy and Childhood," says: "In some cases a cream mixture agrees better than diluted milk, or whey thickened with a small quantity of malted food or predigested gruel is retained when other forms of food are rejected. Gradually and with caution the amount of milk is increased, until at last the child is able to take the full allowance suitable to its age. Even when the convalescence is well advanced, it is advisable to restrict the infant to a milk diet, with or without Mellin's Food, and to avoid the use of unmalted foods for some time."

A Superior Combination of Mercury for Subcutaneous Injection. Desesquelle and Brétonneau recommend benzoate of mercury in preference to the bichlorid. The advantages pointed out are the greater solubility and lesser toxicity of the former. The following combinations are recommended:

R Hg. benzoic.,	0,60
Ammon. benzoic. neutr.,	3,0
Aqu. dest. q. s. ad	60 c.c.

The injection is entirely painless; but, should an analgesic be desired, it can be added in the following manner:

R Hg. benzoic.,	0,60
Ammon. benzoic. neutr.,	3,0
Cocaini mur.,	0,12
Acid benzoic.,	0,60
Aqu. dest. q. s. ad	60 cm ³ .

Gastric Photography. Bial, and later Hirschmann, have devised and are perfecting an instrument by means of which it will be possible to take photographs of the interior of the stomach. It is essentially composed of a series of lenses and a camera attached to a stomach tube. The light is derived from an electric lamp. The results so far obtained are very satisfactory.

A Bacteriologic and Pathologic Laboratory in Delaware. The State Board of Health of Delaware has established a laboratory in Newark, Del., at the State College, for the purpose of aiding the physicians of the state in the diagnosis of typhoid fever, diphtheria, hydrophobia and tuberculosis as well as other diseases which can be elucidated by examination of urine, blood, stomach contents, etc. The aim will also be to carry on original investigation with a view of furthering the progress of sanitary science in general and bacteriology in particular. Prof. Chester, the State Bacteriologist, has been appointed director of this laboratory, and Dr. A. Robin, bacteriologist and pathologist.

Points in the Treatment of Diphtheria. Dr. McSwain emphasizes, in the *Memphis Medical Monthly*, the following points to be observed in the treatment of diphtheria:

1. Give antitoxin.
2. Give it early, fearlessly, judiciously.
3. Give it in full doses.
4. Give it in mild cases, as well as severe ones.
5. Give it in croup that does not yield in a few hours after having given an emetic and a few doses of coal oil.
6. Give it on a clinical diagnosis, not waiting for a bacteriological diagnosis to be made.
7. Use an American product. Don't use a foreign preparation, especially when the manufacturer seeks to prostitute a great blessing to purposes of personal greed.
8. Do not stand a moment on the expense of the remedy; it is at most not so costly as a funeral.
9. If you are not allowed to administer the remedy because of opposition on the part of parents or consultants, quit the case. Do not become a party in the treatment of this or any other disease when you cannot be allowed to use or have used the very best treatment known for the disorder.
10. Local treatment. Hydrogen dioxid is the best of all local remedies, and should be used with a suitable atomizer in proper dilution. A gargle of some agreeable antiseptic solution may be used frequently. No caustics or strong solutions of drugs, mops or brushes are needed.
11. Surgical interference in stenosis of the larynx should be promptly resorted to when suffocation is threatened.

[To these suggestions we would add as very important:

12. Immunize all exposed members of the household—especially the children. Antitoxin probably shows its greatest value when used as an immunizing agent.—Ed.]

MEDICAL NEWS AND MISCELLANY.

American Climatological Association. The annual meeting of this body was held at the Academy of Medicine in New York, under the presidency of Dr. Beverly Robinson, of that city, on May 9th, 10th and 11th. The sessions were uncommonly interesting. On May 11th many of the members participated in an excursion to Liberty, N. Y., and inspected the work of the Loomis Sanitarium for Consumptives there.

Martyrs of Science. Dr. Angelo Knorr, *Privat-docent* in the Veterinary School of Munich, died on February 22d, from acute glanders, contracted in the course of an experimental research on mallein. Before going to Munich, Dr. Knorr had been senior assistant in the Berlin Institute for Infectious Diseases, and he was afterwards assistant in the corresponding institute at Marburg. He was a young worker of the highest promise, and had done good work in regard to tetanus infection. This death recalls some other tragic occurrences of the same kind which have taken place in recent years. Helman, the Russian investigator who discovered mallein, himself fell a victim to accidental inoculation of the glanders virus. Some time afterwards another Russian, Protopopow, died of glanders contracted in a French laboratory. An Austrian physician, Dr. Koffmann-Wellenhof, died of the same disease, contracted in the institute of Hygiene at Vienna. On January 17th of the present year Dr. Giuseppe Bosso, of the University of Turin, died of infection contracted in the course of cultivations of tubercle bacilli made in his laboratory. Not long before Dr. Lola, assistant in the maternity department of the Czech University Hospital of Prague, died of tetanus caused by an experimental inoculation made on himself. Some fourteen or fifteen years ago a medical student of Lima proved that "verruca Peruana" is an infectious disease by inoculating himself with it, an act of scientific devotion which cost him his life. Only this week we have to record that Major J. F. Evans, of the Indian Medical Service, has died of plague contracted while conducting a *post mortem* examination. There are doubtless others who have fallen on the same glorious battlefield, but *carent vate sacro*. Besides those who have died, there are many who have only escaped with their lives after long and painful illness. Professor Kourloff contracted anthrax in a laboratory at Munich, and was saved only by vigorous surgery. Dr. Nicholas supplied, in his own person, the first example of tetanus produced in man by inoculation of the pure toxin of the bacillus of Nicolaier. John Hunter inoculated himself with a loathsome disease, and a London physician now living incurred the same penalty in the cause of science. Morton nearly killed himself with sulphuric ether, and Simpson more than once risked his life in experimenting with unknown anesthetics. Let these facts—and with a little trouble the record could be made much longer—be remembered when antivivisectionists taunt investigators with not daring to make experiments on themselves.—*Brit. Med. Jour.*

A Pessary in the Vagina for Thirty-two Years. Blondel reported before the Obstetric Society of Paris a case of a woman 68 years old, who came to him on account of a profuse, fetid, bloody discharge from the vagina. An examination revealed a hard round body in the posterior fornix, which was extracted with great difficulty. It proved to be a pessary which, according to the woman's statement, was introduced 32 years ago.

A New Treatment of Chorea. Dr. J. Howe Adams contributed to the *Archives of Pediatrics* for May, a paper reporting the successful treatment of several cases of chorea with sulphonal and trional, especially the latter. He gave two-grain doses every four hours for a child of ten years. One of the cases cured in this way had been aggravated by arsenic.

A Simple Method of Reducing Shoulder Dislocations by Manipulation. Miller (*Scot. Med. and Surg. Jour.*, May, 1899) commends, as almost invariably successful, a simple method of manipulation for subcoracoid dislocation. The patient is seated, the arm grasped at the wrist and above the elbow and flexed to a right angle at the elbow. An assistant stands at the other side of the patient and steadies the scapula with both hands. The arm is then carried carefully outward and upward with outward traction until it is at right angles with the body. This procedure is designed to relax the supraspinatus and deltoid, to unlock the neck of the humerus from the deltoid edge and to bring the humeral head in close apposition to the glenoid cavity. As soon as the muscles are felt to relax, an internal rotation of the humerus, produced by dropping the hand, will cause the articular head to glide into place. The additional aid of an anesthetic, of free circumduction to enlarge the rent in the capsule, or of pressure, by the thumb and fingers in the axilla, upon the head of the humerus, may be required. While these procedures have been successfully employed by many surgeons in combination with other methods, the author claims to have systematized them upon a scientific basis.

Some More Obstetric Don'ts. Dr. Moore formulates the following don'ts for the obstetrician:

Do not make an examination unless you are clean, and make as few examinations as possible.

Do not use the grease pot generally found about the room.

Do not have anything about the bed that is not clean.

Do not attend a case of labor unless you are clean enough to assist in a laparotomy.

Do not proceed with the examination until the patient is clean. Respectability is no barrier to infection and disease.

Do not use ergot and douche if there are no indications.

Do not use more than one ligature on the cord if there is only one fetus.

Do not use any but clean pads to the vulva.

Do not fill your satchel with a dirty Kelly pad that has been used in all sorts of cases, but in its place carry *antiseptics*.

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ORIGINAL PAPERS.

RECENT INQUIRIES CONCERNING THE BLOOD CHANGES INDUCED BY ALTITUDE.¹

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THAT there are important changes in the blood when human beings or animals are transferred from an atmosphere in which the air pressure is normal for sea level to one in which it is markedly diminished, is admitted by all observers who have studied the subject.

These changes have been found to be practically the same, whether the subject of the experiment has been under the influence of diminished air pressure, artificially produced in the laboratory, or under the natural conditions in higher altitudes. This fact disposes of the theory that the changes are primarily due to the peculiar conditions other than the diminished air pressure present in high altitudes.

All admit that there is a marked and rapid increase in the number of red cells, and a slower and somewhat less marked increase in the hemoglobin and specific gravity. While the greater number of the observers believe these changes to be real, there are, nevertheless, certain others who advance various theories to prove that they are only apparent.

The important point, then, is whether altitude brings about a true blood regeneration or only an apparent increase of the number of red cells and hemoglobin.

While it is impossible, and indeed unnecessary, to bring before you in detail the literature on the subject, I propose to append to this communication a list of the important references dealing with it, and will chiefly content myself with giving you an abstract of the most important recent communication. It is by Drs. Ossian, Schaumann and Emil Rosenquist,

¹ Read before the American Climatological Association (15th meeting) held at the New York Academy of Medicine, New York City, May 9 and 10, 1899.

of Helsingfors, Finland.² These observers conducted their experiments especially with a view to testing the various explanations given of the phenomena.

They confined their observations almost entirely to experiments on animals. The animals (rabbits, dogs and pigeons) were kept in bell jars at reduced barometric pressure (450-480 mm. Hg.), according to the method of Regnard, Sellier and others, for periods varying from nine to thirty-three days.

The blood examination, which was performed in each case at intervals of several days, consisted of (1) a count of the red cells (Thoma-Zeiss apparatus); (2) the estimation of hemoglobin (Fleischel); (3) the measurement of the diameters of the red cells (dry preparations, average based on 200 to 500 determinations); (4) microscopic examinations, with particular reference to the presence of nucleated red cells (Ehrlich's triacid stain, also eosin and hematoxylin). The blood was drawn from the ears of dogs and rabbits, from the neck in pigeons, and in a few cases blood from the liver and from the aorta was examined before the animal was killed. Besides this, the gross changes in the marrow of the long bones was noted in two cases.

In all cases a marked increase (20% to 50%) occurred in the number of red cells. The high relative humidity (87% to 100%) in the bell jars (temperature 21-26 degrees F.) makes the assumption of an inspissation impossible.

The increase in hemoglobin was not proportional to the increase in red cells. A temporary decrease in the hemoglobin occurred in all cases during the first eight to eleven days. A similar temporary decrease took place in the number of red cells in about one-half the cases.³

In order to determine the effect on the return to normal barometric pressure (760 mm.), the blood examination was continued in many cases for from three to ten months after the animals were released from the bell jars. A decrease in the number of red cells occurred immediately, but was followed by a marked rise, which, after a number of fluctuations, remained, in the majority of cases, at a decidedly higher figure than was reached by the blood count previous to the experiment. (See tables, pp. 140-149.) The authors think that previous investigations have not been pursued for a sufficiently long period. Leuch's recent work on Anemic School Children⁴ who had been sent to the mountains and were examined on their return and at intervals of two to four months afterwards, bear out this point. (See table, p. 161.)

Contrary to all previous investigations, Schaumann and Rosenquist

² Ueber die Natur d. Blutveränderungen i. Hohenklime., *Zeitschr. f. klin. Med.*, Bd. XXXV., Heft 1-4, pp. 126-170 & 315-349, 1898.

³ Z. Schrift f. klin. Med., 1898, Bd. XXXV., Heft. 1-4, pp. 123-170, pp. 315-349.

⁴ Leuch, *Correspondenzblatt Schweizer Aertzte*, No. 21, p. 657, 96.

find that during the period of increase of the red cells the average diameter of the cells increases without exception. (See tables, pp. 140-149.) This is due to a diminution in the number of microcytes, and an increase in the number of macrocytes, the proportion of cells of average diameter remaining unchanged. After a return to normal pressure, the average diameter decreases, the decrease occurring in the ratio between the microcytes and the macrocytes, while the proportion of cells of average diameter remains the same as before. Measurement of the red cells in blood from one of the authors, made during a journey into the Norwegian mountains, coincides with this finding. (See tables, p. 166.) The assertions of Viault, Schroeder and others in regard to size of corpuscles are discredited on the ground that no actual measurements were made, but that reliance was put upon visual comparison. Koeppe's figures⁵ in regard to size of cells suffer, in their opinion, from the faults inherent to the hematocrit, and cannot be used for comparisons.

Nucleated red cells were found by them to be slightly increased in number throughout confinement at low pressure, and very markedly at a certain period; this last would seem to have no special significance, because no two cases agreed in the time of this period. (See pp. 140-149.) In the period after the release from the bell jar, the number of the nucleated red cells gradually diminished except at the time of the beginning of the diminution of red cells, when a slight increase took place. Cell shadows were increased in number after the diminution of red cells began.

The blood of pigeons confined in the bell jars showed numerous mitotic figures and actual division of nuclei; many of the cells were polychromatophilic, which is regarded as evidence of increased proliferation of blood cells.

In specimens of blood taken simultaneously from the skin, liver and aorta in two animals confined in bell jars and from two control animals, the number of red cells per c.mm. in each locality was found to be exactly the same.

The examination of the bone marrow gave no reliable results and no microscopic examination of it is reported.

After reviewing the literature of the subject, Schaumann and Rosenquist point out that six hypotheses have been adduced to account for these changes in the blood produced by high altitudes.

Two of these assume that the increase in red cells is real. Miescher, Egger and others support the view of increased proliferation of blood cells in the blood-forming tissues, while Fick's theory is that there is a prolongation of the life of the individual cell, along with a normal proliferation.

The other four hypotheses contend that the increase in red cells is only apparent. Thus, Grawitz considers it to be entirely due to an inspissation

⁵ Koeppe, Arch. Anat. Physiol., pp. 154-184, 1895.

of the blood; while Bunge believes it to be the result of an exudation of plasma into the lymph spaces of the tissues.

Winternitz supposes that red cells become aggregated in certain of the internal organs and are forced into the general circulation by changes produced upon the latter by altitude, and Zuntz finally refers it to vasomotor control, which is influenced by certain factors of high altitude.

In the light of the results of this investigation, the following criticisms of each theory are made. The authors consider that their results support the theory of new formation of blood cells, but are forced to make changes in the terms of its form.

*Vasomotor theories.*⁶—1. Zuntz's hypothesis: The authors point out that in their own experiments no factors exist which could give rise to the required nervous irritation, that their animals were removed from the bell jars for each examination, and that, according to the theory, the irritation should quickly disappear.

With reference to the theory that the number of red cells is increased in the capillaries and decreased in larger vessels, it is pointed out that in former investigations blood from both the capillaries and the larger vessels had been examined, with the uniform result of an increase in red cells; that the simultaneous increase in red cells and decrease in hemoglobin (at the beginning of the experiments) cannot be explained by this theory. That a purely vasomotor change should produce no change in the size of the red cells; that the over-stimulated nerves would eventually relax; that a return to higher pressure should produce an immediate fall in the number of red cells to normal, which is not the case.

2. Bunge's theory⁷ is met with the same objections.

3. Winternitz's theory⁸ the authors oppose by reference to their examination in two cases of blood taken simultaneously from the skin, liver and aorta, in each of which localities they found the same count. (Corroborated by Breitrustin.)

4. Grawitz's theory of inspissation:⁹ This theory is invalidated by Schaumann and Rosenquist's experiments, in which the respired air was almost saturated with water vapor; by the fact that loss in water by the blood is rapidly compensated for by the tissue fluids, and that a true inspissation of the blood is always accompanied by a proportionate loss in weight of the animal; and, further, by the fact that in true inspissation of the blood the diameter of the red cells is always decreased.

Theories assuming a true increase in red cells. 1. Fick's theory:¹⁰

⁶ Schumburg u Zuntz, Pfluges Arch. Physiol., Bd. LXIII., pp. 461-494, 96.

⁷ Bunge, Verhandlungen d. 13. long. inn. Med., 1895.

⁸ Winternitz, Centralbl. klin. Med., Bd. XIV., No. 49, pp. 1,017-1,022, 1893.

⁹ Grawitz, E., klin. Pathologie d. Blutes, pp. 333-343, Berlin, 1896.

Limbeck, R.v., klin. Pathol. d. Blutes, 2. Aufl. p. 207, Jena, 1896.

Ehrlich, Untersuchungen, z. Histol. u. Klinik. d. Blutes, p. 99, Berlin, 1891.

Quinke, Deutsch., Arch. f. klin. Med., Bd. XX., pp. 1-31, 1877.

¹⁰ Fick, A., Pfluger's Arch. f. Physiol., Bd. LX., pp. 589-593.

This theory, which premises that the absorption of oxygen is slower than normal at high altitudes and the consumption of hemoglobin is decreased, is discredited because it has been conclusively shown that metabolism is more rapid at high altitudes than at sea level and must, therefore, increase particularly the consumption of hemoglobin.

2. The theory of regeneration of Miescher, Egger and¹¹ others is based on the two premises that (1) microcytes appear during the period of increase in red cells, and that (2) the increase in hemoglobin does not keep pace with that in the number of red cells. The last point the authors grant, and point out that it has been regarded generally (Otto, Hoffmann and Limbeck) as an evidence of regeneration. The first assumption is disputed, and attention is called to the fact that Ehrlich, Quincke and V. Limbeck look upon microcytes as products of degeneration of red cells, and also that one of the authors (Schaumann) has found in secondary anemias that microcytes are most numerous at the height of the disease, and that they disappear as convalescence sets in, and give place to macrocytes. To determine this point experimentally, two animals (a rabbit and a dog) were bled, and a differential count made of red cells of various diameters, with the result that microcytes were seen to diminish markedly in number immediately after the bleeding when regeneration is most active. (See table, p. 333.) It was found, moreover, that an increase occurred in the number of macrocytes, and that this, instead of an increase in microcytes, is an accompaniment of regeneration. In accordance with this finding, it follows that the increase in macrocytes met with in the blood in the author's first experiments indicates a regeneration of red cells. This conclusion is strengthened by the occurrence of nucleated red cells in the mammals, of mitotic figures in the red cells of the birds employed, and of "shell shadows" in the blood after release from the bell jar.

Schaumann and Rosenquist, therefore, conclude that all changes which occur in the blood, due to diminution of barometric pressure, are best and most easily explained by the assumption that there is an increased proliferation of red cells.

The authors claim that this theory holds also for the explanation of the results of the *clinical* observations made in high altitudes. They reach this conclusion by a process of elimination, having shown in their criticism of the other theories that causes other than a diminution of atmospheric pressure are insufficient for the production of the hematic phenomena. As positive proofs from clinical material, they refer to the following: The hemoglobin does not increase in proportion to the increase in the number of red cells; the increase in the average diameter of red cells, and the presence of normoblast nuclei found free in the blood. (The last two

¹¹ Miescher, Correspondenzbl. schweizer Aertzte, pp. 809-832, 1893. Egger, Verhandlungen d. 12, Cong. inn. Med., pp. 262-276, 93.

points are dependent on the findings in the blood on Schaumann's journey to Norway.)

In addition to these inquiries of Schaumann and Rosenquist, some of the most valuable evidence in favor of a true blood regeneration is to be found in Dr. Paul Regnard's book, "*La Cure d' Altitude*,"¹² in which he gives convincing proofs, based mainly on his experiments at the laboratory of the Sorbonne.

The Smithsonian (Hodgkins) prize memoir for 1898 by Drs. Herrera and Lope, of the City of Mexico, in which the results of their observations, conducted on the high plateaus of Mexico, are recorded, also support the belief in the true blood regeneration theory.

On the other hand, Drs. Schroder and Meissen, of Hohenhonnheim, while confirming the fact that there is an increase in the number of red cells and hemoglobin under diminished air pressure, ascribe it as largely due to the effect of the diminished air pressure upon the cover glass of the Thoma-Zeiss instrument. As, however, the blood examinations of Schaumann and Rosenquist were made after the animals were removed from the bell jars, and under normal air pressure, as also were those of Regnard and many other experimenters, this theory fails to account for even a proportion of the increase.

The interesting and handsome volume recently published by Prof. Angelo Mosso,¹³ of Turin, entitled "*Man in the High Alps*," contains a protest against the belief in a true blood-cell proliferation, but the only original evidence offered is some experiments made by his assistant, Dr. Kuthey, in Turin and at Geattenly (elevation 4,000 feet) upon two rabbits, one dog and three men. These experiments are limited to daily observations for the first four continuous days; but as the blood changes are not complete or permanent under a month, these experiments are not worthy of consideration as evidence in this discussion.

I had hoped to be able on this occasion to offer for your consideration the details of experiments that I have instituted in Colorado; but I must postpone this for the present, and content myself with merely giving you a brief statement of the general trend of these inquiries. The fact that there are so many sources of error in the instruments used, from the variations of the personal equations of the observers, and the variations due to outside causes and circumstances in the observed, that it was found that a considerable amount of preliminary work has to be done before anything like definite figures can be given, so that the experiments conducted in Colorado Springs have been largely an inquiry into the value of the different methods and a study of the causes of error. I am indebted to my colleague, Dr. P. F. Gildea, for the practical work carried on, also to the skilled assistance

¹² Masson et cie., Paris, 1897.

¹³ *Der Mensch auf den Hochalpen*, Angelo Mosso, Leipzig, Verlag von Veit and Comp., 1899.

of Dr. W. Baumgarten and Dr. D. P. Mayhew. Many of the observations were made by these three gentlemen at the same time, consequently the chances of error were considerably lessened.

We believe that, to give approximately correct figures, numerous observations must be taken and averages made, because two observers, counting from the same drop of blood and with the same instrument within a few minutes of each other, not infrequently find variations in the number of red cells of from 100,000 to 200,000.

Daland's hematocrit gave a red cell count averaging about 500,000 lower than the Thoma-Zeiss instrument. The count in two tubes of the hematocrit varied from each other 100,000 to 200,000. When the hematocrit was revolved one minute, the count nearly approximated that of the Thoma-Zeiss. If revolved two minutes, according to directions, the count was as stated, 500,000 lower. If the count was not taken at once, it appeared higher because of a rebound in a few seconds from the pressure produced by the revolution of the instrument.

The results from using the Hammerschlag specific test for hemoglobin varied greatly, and were obviously less reliable than the Fleischel color test. The defect in the Hammerschlag test may have been due to an increased evaporation of the benzol and chloroform under the diminished air pressure of Colorado.

The experiments, however, confirm in a general way the theory of increased blood regeneration. There was found an increase of the red cells, hemoglobin and specific gravity of the blood after continued residence in Colorado Springs in the blood of those coming from the sea-level. This increase remained permanent during residence and was found to be only partially lost when the blood was again tested on the return of those who had been anemic after two or three months' absence at sea-level.

The ascent to higher levels produced a still greater and very rapid increase of red cells. For instance, Mr. B., a gentleman who had kindly submitted himself to frequent blood tests in Colorado Springs, one day made an excursion in a train ascending as high as 10,000 feet, being 4,000 feet above Colorado Springs (6,000 feet elevation), from whence he started. The following morning, after his return, the blood showed an increase of 600,000 red cells. Several counts were taken later, and the last, a month after making the excursion, showed that he still retained a gain of 400,000 red cells.

I believe the members of the Society could aid materially in solving the problems connected with the influence of altitude upon blood if, when they are sending patients, or know of persons in normal health going, to Colorado, they would test their blood before leaving sea-level and would request them to submit themselves to a similar examination immediately after their arrival in Colorado. In this way the contrast would be much clearer than it is when all observations are taken at an altitude and the

first examination is made just after the person emerges from the exceptional and trying conditions of a long railroad journey. The members could do good work by testing the blood of persons before and after visiting the sea shore.¹⁴ The observations of Marestang are the only ones I am aware of. The effect upon the blood of residence in desert climates of moderate elevation should also be inquired into.

Further, I believe the Society as a body should appoint a committee that would receive and hold all publications bearing on the subject of climate, and who would send a list of such publications three or four times a year to the members.

THE LABORATORY AS AN AID IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE STOMACH.¹

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THE well-known dictum of the wise Solomon, that "there is nothing new under the sun," is hardly applicable to scientific progress. In looking over the history of any science, we see the rapid strides made by the human mind over vast territories of ignorance and superstition. The same is true of medicine. As late as the sixteenth century, La Martinière, a French astronomer, makes the following absurd statements:²

"The lunar planet is damp of itself; but, by the radiation of the sun, is of various temperaments, as follows: In the first quadrant, it is warm and damp, at which time it is good to let the blood of sanguine persons; in its second, it is warm and dry, at which time it is good to bleed the choleric; in its third quadrant, it is cold and moist, and phlegmatic people may be bled; and in its fourth, it is cold and dry, at which time it is well to bleed the melancholic. It is a thing quite necessary to those who meddle with medicine to understand the movement of this planet, in order to discern the causes of sickness. And as the moon is often in conjunction with Saturn, many attribute to it apoplexy, paralysis, epilepsy, jaundice, hydropsy, lethargy, catapory, catalepsy, colds, convulsions, trembling of the limbs, etc., etc. I have noticed that this planet has such enormous power over living creatures that children born at the first quarter of the declining moon are more subject to illness, so that children born when there is no moon, if they live, are weak, delicate, and sickly, or are of little mind, or idiots." To Saturn he attributed "long, quartan, or daily fevers, indisposition of the tongue, arms and bladder, general paralysis, gouts, abscesses,

¹⁴ *Revue de Med.*, No. 6, 1890.

¹ Read before the Delaware State Medical Society, June 13, 1899.

² Quoted by C. Flammarion in "The Wonders of Heaven."

obstructions of the heart and spleen, the black jaundice, polypus, diseases of the intestines, corns of the feet, spitting of blood, canine appetite, difficulty of breathing, stone in the loins and bladder, epilepsy, cachexy, dropsy, melancholy, leprosy, and other diseases proceeding from foul and putrefying humors."

In the seventeenth century Dr. Willis, a distinguished English practitioner and author, has the following to say on the treatment of jaundice as practiced in his time: "Medicines endowed with a Volatile Salt, as earthworms, snails, millepedes, nay, lice, the Dungs of Fourfooted Beasts and of Fowls being introduced into Practice for curing the Jaundice are usually given, not only by Empyricks, but likewise are prescribed by Physicians of the best account." Another remedy for jaundice recommended by the author as a never-failing panacea is the following: "Take the fresh Urine of the Patient made at one time, ashes of the Ash tree searced, what suffices. Mix them and make it into a paste, and form it into three Balls of an equal bigness and put them in a close place near the Fire or a stove. When these Balls grow dry and hard, the Jaundice vanishes." . . . "The reason of this operation is, that when the Lixivial Salt in the ashes is mixed in the Urine it presently sets free the Volatile Salt which before was kept under in it, or entangled with other particles, and at the same time this is done in the Icterial Urine it happens by sympathy that the Volatile Salt also in the Blood of the Patient gets free from the Dominion of the fixt Salt and Sulphur and consequently the Icterial Dyscrasy of the Blood vanishes."

This is similar to the "sympathetic powder" of Digby, who prospered during the same enlightened age. The powder was applied to the weapon which caused the wound.

I have in my possession a very interesting book, entitled: "Physiology, Nosology, and First Lines of the Practice of Physic," written by William Cullen, M.D., and first published in 1772, having been republished as late as 1827. In this book the author, speaking of digestion, says: "The alimentary canal, and especially the stomach, are commonly affected by the different states of the brain, and the stomach again has more effect upon the brain than any other part of the system. We will not pretend to explain completely what is the foundation of this singular connexion; but we can observe this, that no internal part of the system is so remarkably an organ of sensation as the stomach, that it not only expresses its own different conditions with regard to fullness, emptiness, the acrimony of the matter which it contains, etc., but the general state of the system also, as more full or empty. The stomach must, therefore, have a more particular power in affecting the brain, as it is from the organs of sense that the beginning of all the motions of the system arises."

To further prove his statement, the author adduces several examples, demonstrating to his own satisfaction the fact that everything introduced into the stomach acts on the system by its local action on the former. The

feeling of hunger he ascribes to the emptiness of the stomach and the consequent contraction of the muscular fibers, which view he opposes to that of Haller, who believed that hunger was produced by the friction of the opposite sides of the stomach when empty. Moreover, Cullen traces an intimate connection between perspiration and hunger. An active man perspires, hence he has a good appetite; while one of sedentary habits has a poor appetite, for he does not perspire. Thirst, on the other hand, is due chiefly to the dryness of the fauces produced by the heat and surface evaporation. Speaking of digestion, the author divides all food stuffs into oil and saccharine matter. "The vegetable matter, by undergoing a putrefactive fermentation, is changed so as to acquire very exactly most of the characters of animal matter." The saliva serves the sole purpose of moistening the food, while "the fluids of the stomach have the power of suddenly and powerfully loosening the fixed air of the alimentary matters, which is the first step toward putrefaction, and that which most effectually breaks down the texture, and perhaps the mixture of bodies." These putrescent bodies excite fermentation of the vegetable substance producing acid in the stomach, this acid stops putrefaction (acid formation) and either becomes absorbed or unites with the putrescent and oily substances. Admitting his ignorance as to several other points in digestion, the author concludes that assimilation is not complete until the chyle, together with the blood, passes through the lungs, there undergoing some changes which he could neither define nor explain.

I have dwelt somewhat at length on these old doctrines and conceptions to point out the contrast between them and the ideas of the present day. By deducting the knowledge possessed not quite a century ago from that of the present, we get the difference representing the progress for the last few decades. This remarkable progress in medicine is due to its emancipation from the bondage of superstition with which it was surrounded and its assimilation with the sister sciences, on which scientific medicine is based. The mysterious and miraculous were dispersed, like a fog, by the streaming in of the rays of science. Medicine is an art, but is founded on positive science; and, unless this foundation be constantly kept in view, no progress is possible. The art of healing is dependent on personal intuition and skillful guessing, if I may so express myself, but the science of healing is based on careful research. Hippocrates possessed the art, and not the science, of medicine. He observed and reproduced the clinical picture of disease as the ancient Greek sculptor observed and reproduced beauty. The clinical pictures of Hippocrates and, later, Sydenham are perfect, for their artistic abilities were great, but the causative factors were hidden to them, and philosophic speculations were made to fill the gaps. The chemist, the botanist, the bacteriologist cannot imagine; they must actually observe the various phenomena they describe. They are in a measure photographers, and not artists. Science flourishes in the laboratory.

Chemistry would be impossible without a chemical laboratory. Bacteriology remained in its infancy until the laboratory technique became perfected. Medicine, depending largely on chemistry, of necessity depends on the laboratory. What is physiology but a study of the bio-chemistry of the living body? What is pathology but the study of the effects of poisonous materials, originated either by bacterial action or otherwise, on the living tissue? What is bacteriology but the bio-chemistry of the unicellular micro-organism? Every cell, as we know, is composed of C. N. S. H. O. P. Cl. K. Na. Mg. Ca. Fe. "The conception of a 'vital ether,' a 'spiritus animales,' a 'vital matter,' etc., with which the earlier physiology so freely dealt, have, therefore, in harmony with the advanced development which analytical chemistry has undergone at the present time, completely disappeared from the present theory of life; living substance is composed of no different chemical materials from those occurring within lifeless bodies."³

The statement, then, that a good clinician can get along without the aid of a laboratory, is absurd. Health is the expression of normal chemical activities of the cell. Disease is the antithesis; it is the expression of abnormal chemical activities. To study disease is to study toxicology, *i. e.*, the effect on the organism of an overdose of some chemical product of metabolism. Urea retained in the system kills; so does carbonic acid; while both are normal products of metabolism. Strychnin is a vegetable alkaloid which affects the body in poisonous doses like tetanus. The delirium produced by belladonna is not unlike that caused by some diseases. Coma of opium poisoning is almost identical with coma resulting from uremia. Moreover, when we remember that, in diphtheria, dysentery, cholera, typhoid fever and other infectious diseases, the morbid and fatal effects are produced by the toxins which are chemical products of metabolism of the bacteria, we can readily see the vast importance of chemistry, both in physiology and pathology. Especially is this the case in digestion. "The digestive juices," says Foster,⁴ "do bring about, inside the alimentary canal, changes which in the main are the same as those observed in laboratory experiments outside of the body." Digestion in the stomach, excepting those enigmatic problems of auto-digestion of the stomach, absorption, etc., is a series of chemical changes which can very well be studied in the laboratory.

It is generally conceded that, in order to appreciate pathologic changes taking place in a certain organ, we must understand the physiology of the organ involved. Disease is not an entity; it means, as even the word implies, the absence of health, just as black means the absence of white. Disease, in other words, is pathologic physiology. If this is granted, logic will force upon us the conclusion that, since physiology is largely a series of chemical processes, pathologic

³ Max Verworn: "General Physiology," The Macmillan Co.

⁴ M. Foster: "A Text Book of Physiology."

physiology is of similar nature, and therefore should be studied largely in the laboratory. Applying these general principles to diseases of the stomach, we are led to the conviction that they cannot be studied intelligently unless the laboratory is called to our aid. I do not wish to be understood that every disease of the stomach can be diagnosed by the aid of the test tube and microscope. Such statements, made by thoughtless enthusiasts, only tend to bring discredit upon these latest methods of diagnosis. All I claim for the laboratory is the modest but none the less important role of aiding the physician in determining the degree of departure in each case from normal physiologic activity. The presence of albumin in the urine is of itself not pathognomonic of Bright's Disease. The absence of HCl or presence of lactic acid in the stomach is not positive proof of cancer, but these findings, added to information obtained from the clinical symptoms, will establish a positive diagnosis. No physician can diagnosticate intelligently diseases of the stomach without a chemical examination of its contents; especially is this true of so-called functional gastric derangements. The use of the stomach tube, therefore, should be as frequent in the diagnosis of gastric diseases as that of the clinical thermometer, the statements of the skeptics to the contrary notwithstanding.

The dangers so many are wont to see in the introduction of the stomach tube are largely imaginary. Any intelligent physician will abstain from using the tube in the last stages of pulmonary tuberculosis, emphysema, fevers, aneurysm, heart disease, extreme debility, in short, any condition in which an undue excitement or irritation may act injuriously and often fatally upon the patient. There are, no doubt, a few nervous patients with whom even an expert will fail in the introduction of the tube. But in the majority of patients the tube can be introduced with considerable ease and comparative comfort once you secure the confidence of the patient and the proper skill, which, by the way, can only be acquired by practice. Even in the nervous cases above referred to, a sample of the stomach contents can be obtained by the aid of an emetic of the so-called central variety, such as ipecac or apomorphin. The information we obtain from the analysis of the contents is often so valuable as to fully compensate for the trouble. First, we determine as a preliminary step the amount of acidity due to free acids, generally by congo-red, and the acidity due to free HCl, by phloroglucin-vanilin or methyl-orange. We also observe whether the food is well digested, whether mucus or bile is present. Then we make a quantitative estimation of free HCl by Mintz's method, which is far preferable to the inaccurate method of Töpfer, the total acidity by phenolphthalein, and the combined HCl by alizarin (Töpfer's method). The presence or absence of lactic acid is determined by Uffelman's test; that of fatty acids, by the very simple and convenient method of Cohen and Mehrling. If any bile is present, it can easily be determined by Gmelin's test. We next determine

the condition of starch digestion by testing for free starch with Lugol's solution, and the products of starch—maltose and dextrose—by Fehling's test. The proteid digestion is finally studied by determining the presence and activity of rennin, of the ferment which will coagulate milk in a neutral medium, when present, while the activity of pepsin is determined by the rapidity with which a certain amount of the filtrate will digest a known quantity of egg-albumen. The various stages of proteid digestion, namely: Albuminoids, acid albumin or syntonin, propeptones and peptones are easily determined; the first by boiling; the second, precipitation with decinormal soda solution; the third, addition of sodium chlorid and a few drops of acetic acid, if necessary; and the fourth, by the biuret reaction.

I have not described in detail the various methods employed in gastric analysis, for this would be only a repetition of what is fully treated in the later works on this subject, notably Hemmester's text-book on "Diseases of the Stomach," and Reed's series of "Talks" in the *INTERNATIONAL MEDICAL MAGAZINE*.

I shall limit myself to pointing out a few of the indications afforded by the results of the chemical analysis. The human saliva has a more important function to perform than merely to moisten the food. It contains an active enzyme, which converts starches into maltose and dextrose. This conversion begins in the mouth and continues in the stomach for fifteen to thirty minutes, or until the acidity reaches 1:1,000. The stomach contents do not at once become acid. The HCl first secreted combines with the albumin, forming acid-albumin, and not until complete saturation of the acid has taken place does free HCl appear. This allows the ptyalin to act undisturbed in the stomach during the first period of digestion. When, however, the HCl is secreted in very large quantities, as in some cases of hyperacidity, the gastric contents become acid at once, and the digestion of starch is stopped. The presence, therefore, of undigested starch in the filtrate, as determined by Lugol's solution, points to hyperacidity. Again, according to Boas, the starch digestion is resumed when the acidity of the stomach contents is diminished, as it normally is at the end of a meal. In hyperacidity this diminution does not take place. On the other hand, we find proteids perfectly digested. The reverse takes place in hypoauidity or anacidity, in which condition starches, but not proteids, are well digested.

The much more pernicious effects of hyperacidity as compared with hypo- or anacidity are quite apparent. With good gastric motility, the organism can very well get along with little or no digestion in the stomach, as is attested by the numerous cases of achylia gastrica, or atrophy of the gastric glands, where the patients are in good health so long as the motor power is good; and by the recent case of Shlatter, where the stomach was entirely removed, and yet digestion was perfect until the patient died from secondary carcinoma, eighteen months after the operation.

The proteids do not undergo any putrefactive changes in the stomach

unless dilatation is present. Quite a different state of affairs prevails in cases of hyperacidity. The hyperacid chyle not only irritates the mucous membrane of the stomach, aggravating the already existing proliferation of glandular structure, which, according to Hemmeter, is present in two-thirds of all cases of hyperacidity,⁵ but passing into the intestine neutralizes the alkaline medium so essential for intestinal digestion.⁶ This inhibits digestion, and in time produces intestinal catarrh, which is one of the most obstinate affections to cure. The carbohydrates depend largely for their digestion on the small intestine, especially when the secretion of the stomach is hyperacid; and retarded intestinal digestion leads to fermentation in that viscus. That is why, in hyperacidity, we are likely to have intestinal fermentation, while in hypo- or anacidity the fermentation is usually more especially gastric. When, however, the motility is deficient or dilatation of the stomach is present, hypoacidity is of course a much more distressing affection. The antiseptic properties of HCl have been demonstrated by many careful observers. Harris⁷ found that when cats and guinea pigs are made to fast, no bacteria are found in the stomach within twenty-four hours, and only few within forty-eight hours. On feeding the animals on cultures of anthrax, he failed to find the bacilli two to four hours after ingestion. Miller⁸ proved that lactic acid fermentation will keep up until the acidity of the gastric contents produced by HCl reaches 1.6:1,000. If too little acid is secreted, or too much food ingested, the fermentation will keep up. Gastric derangements from various causes may favor fermentation by decreasing the secretion of HCl.

Kast⁹ found that when the secretion of HCl is diminished the ethereal sulphates in the urine are increased. With regard to this last observation, however, I may safely state that it cannot be accepted as a general rule. During my charge of the laboratory of Dr. Boardman Reed, in Philadelphia, I had many opportunities to convince myself that an excess of indican may go hand in hand with hyperacidity.¹⁰ The degree of putrefaction is largely dependent on the motility of the stomach and the state of intestinal digestion. With poor intestinal digestion putrefaction will take place, while

⁵ J. C. Hemmeter: "Diseases of the Stomach," 1898; and *Jour. Amer. Med. Assoc.*, October 9, 1897.

⁶ Boardman Reed: "The Frequent Dependence of Insomnia, Mental Depression and Other Neurasthenic Symptoms upon Diseases of the Gastro-Intestinal Tract." *Jour. Amer. Med. Assoc.*, July 11, 1896; and "The Excessive Secretion of Hydrochloric Acid by the Stomach, and Its Possible Serious Consequences," *International Clinics*. Vol. I., 7th series.

⁷ "Report on Certain Bacteria in Their Relation to Digestive Processes" (Rep. of Med. Officers to Loc. Gov. Board, 1888-89).

⁸ "Ueber Gahrungsvorgange in Verdaungstract u. die dabei beteiligten Spalt-pilze," *Deutsch. Med. Woch.*, 1885, No. 13.

⁹ "Ueber die quantitative Bemerkung der antiseptischen Leistung des Magensaftes, Festschrift zur Eröffnung des Neuen allg. Krankenhauses zu Hamburg-Eppendorf," Hamburg, 1899.

¹⁰ Hemmeter also found an excess of indican in many of his cases of hyperacidity.

when the latter is good and the motor power of the stomach is efficient to transfer the undigested food to the duodenum within the normal time, no putrefaction will occur. With bad motility the case is different. The numerous bacteria usually found in the stomach find an ideal environment. The stomach serves as an excellent incubator, while the contents in which the proteids are in a state of partial solution and decomposition form a culture medium equal to any in the bacteriologic laboratory. The toxins, produced by the bacteria, absorbed in the gastro-intestinal tract, poison the nervous system, producing the well-known but not as well-appreciated phenomena of autointoxication.

Should free HCl be found wanting, the total acidity will help us in differentiating functional anacidity from gastric atrophy. If the total acidity is not below 10-12 and is not due to fatty acids (this is determined by the method of Cohen and Mehring mentioned above), while rennin is found active, gastric atrophy may generally be excluded.

Time and space will not permit me to give a detailed account of the many valuable services rendered to us by the microscope in this particular field. I shall only mention a few. Boas, and lately Hemmeter, point out the important information to be gathered from a microscopic examination of the "stomach washings." In many instances diligent search will disclose a detached piece of mucous membrane, which, when put under the search-light of the compound lens and the condensor, will show the condition of the peptic glands. In cancer, we may find "cancer nests" and, as pointed out by Leider, who has done pioneer work in this line, cells in a state of indirect division (mitoses), which are diagnostic of cancer. Again we may find the Oppler-Boas bacillus, which, according to many observers, is almost of pathognomonic significance in carcinoma.

Of minor importance, but none the less valuable, is the finding of yeast fungi, which, when in large numbers, point to fermentation, mycoderma aceti, mucus cells, undigested food, especially when it is known to be the remnants of a previous meal, etc. This work is still in its infancy; but, by persistent effort, we shall no doubt succeed in rearing this infant into a vigorous servant to the diagnostician.

Now, what role does the laboratory play in gastric therapeutics? I am aware that there are many physicians who care very little for diagnosis, and treat their cases "symptomatically." To them my foregoing remarks would appeal but little, were not I able to show that if it is difficult to make a diagnosis without the aid of the laboratory, it is absolutely impossible to treat diseases of the stomach intelligently without a previous chemical examination of the stomach contents. The old way of prescribing, first, acids with or without pepsin, then alkalies before or after meals, then pancreatin or, perhaps, papoid, caroid and all other stuff that "digests all food eaten by man or beasts," has, fortunately for the patient, been found very unsatisfactory, to say the least. It is just because the general treat-

ment of so-called "dyspepsia" is unscientific, that quacks thrive so well on the credulity of the people. To be scientific, the treatment must aid nature, and not antagonize her. To administer HCl when alkalies are indicated, and *vice versa*, is to aggravate the condition. To allow the patient to keep up a diet which has brought about the dyspepsia is to establish a vicious circle which robs the physician of a patient and adds a victim to the quack. You cannot correct the patient's digestion unless you know where the defect is, and how can you know it without a careful analysis?

LATE CONSECUTIVE ORO-PHARYNGEAL SYPHILIS.¹

BY LEWIS S. SOMERS, M.D.,

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THE division of syphilitic manifestations into primary, secondary, and tertiary lesions, while of value in the study of the effects generally, is not distinctly marked in the oro-pharynx; the chronologic order in which the changes take place being here very irregular as compared with the dermal alterations. In the pharynx and mouth all the stages may be observed, but the lesions are varied, to a certain extent interchangeable, and have selective points for the more prominent manifestations. For example, the posterior pharyngeal wall is singularly exempt, while the mucous patch is frequently seen at the points where irritation is most marked, as on the anterior pillars, and especially the lingual and buccal surfaces in proximity to imperfect teeth. Gumma, while appearing on the tongue, is more frequent on the tonsil, and is comparatively rare in other portions of this region.

The varied phenomena which appear on the border line, as it were, of the principal stages, are frequent here, and, for convenience of study, have been classed as the early and late consecutive lesions. These are most prominent after the secondaries, and yet appear too early in the course of the disease to be placed under the class of tertiary lesions, as they frequently partake of the characteristics of both. Roberts, in expressing this relation, says that "frequently, after the secondary period, there succeeds a period varying greatly in duration, in which there are no symptoms, or only occasionally slight cutaneous eruptions, or little ulcers on the tongue or lip," this interval being followed by tertiary symptoms. Three cases have been selected as showing the main features here outlined, the first with late consecutive mucous plaques of the tongue.

H. P. Male, age forty-four years. Was seen January 2, 1897, complaining of sore tongue. Had never had any illness except ulcerated sore throat seven months ago, and the present condition of his tongue, which has

¹ Read before the Northwestern Medical Society, April 4, 1899.

lasted for ten weeks, although his hair had been falling out for two years. Examination showed a small mucous patch on the anterior surface of the apex of the tongue. About one-half inch to the right of this there were three patches, covered with a gray, opalescent membrane, and all these were situated on the same base. The teeth were in bad condition, and especially so at the site of the mucous plaques, where they irritated the tongue to a considerable extent. The pharynx was brick-red in color, and over the left anterior pillar there was a dark red-brown patch; this was not ulcerated, the only change being the alteration in color, diagnostic of syphilis. Although but an indefinite history of infection was obtained, the characteristic appearance of the oro-pharynx was sufficient to make a diagnosis, and, in addition to local medication, the patient was given bichlorid of mercury. Under this treatment the plaques disappeared in three weeks, and the dose of mercury was reduced. This was soon neglected, as the tongue no longer caused any annoyance, and he was not seen for five weeks, when a new patch had developed on the left side, in contact with a decayed tooth. In addition to an increase of mercury, he was given hydriodic acid, and the affection continued for six months, the plaques ulcerating before complete healing; but now, after several years, no new manifestations have occurred.

The mucous plaque, or, as it is commonly called, the "milk spot," may be seen in either early or late consecutive syphilis and, when observed early in the course of the affection, may immediately follow the initial lesion, before any dermal manifestations have appeared. The early variety, as regards conformation, location, etc., does not differ in any essential respect from that observed at a later period, except that it is more apt to be moist, while those seen later are unattended with much secretion, and present a dry, somewhat glazed appearance. Among its features in this location is the decided tendency to recurrence, and its contagious properties; duplicating itself whenever in contact with adjoining mucous surfaces, and readily being transmitted to other individuals.

Another feature of interest is the obstinate character of the patch, rarely, despite the most energetic medication, healing in less than two months, and more frequently appearing at intervals over a period of from four to six months, or even longer. Appearing first as small, red areas, single or multiple, they become covered with a pearly pellicle, and may remain in this state for a long time until the pellicle becomes detached and is replaced by an ulcer. Appearing at points of greatest irritation, there is a consequent tendency to ulceration; but the ulcer is limited, does not destroy the adjacent tissues to any extent, and heals, leaving a cicatrix, the presence of which, should tertiary lesions develop and the history of the case not be obtainable, may aid in making a correct diagnosis.

Later in the course of the disease, we find the gumma in its non-ulcerative form, the following case illustrating this condition when the tongue is involved.

Mrs. C. D. Age twenty-nine years. Was seen October 28, 1896, complaining of severe pain at the base of the tongue for about six weeks. Previous to this she had noticed a lump on her tongue for several weeks, which gave her no inconvenience. Eleven years previously she had a chancre, and six months later a general dermal eruption, for which she received medical advice. Her first pregnancy resulted in a miscarriage, but following this she bore two living children, one dying in a short time, the other now living and giving no evidence of syphilitic taint. Examination of the upper respiratory tract revealed nothing of interest except the tongue, in the tissues of which was embedded a gumma, one-half inch in diameter and somewhat elevated above the surface. It was situated on the dorsum, near the base, and in immediate proximity to the median raphe. Capping the top was a small ulcer, showing epithelial erosion from irritation and not destruction of tissue, as occurs later. She was placed under mixed treatment and in a few weeks the tumor had disappeared.

Gummata of this region make their onset in such an insidious manner that often the patient is unaware of their presence until ulceration results. Starting as minute points, they progress slowly; are ovoid, painless and usually multiple, but are frequently seen as single or isolated growths. The mucous membrane covering is tense and reddened, and, as active changes occur, breaks down, forming an ulcer. Unlike the mucous patch, this manifestation of syphilis is not as readily diagnosed and the history of the case, with the results obtained by treatment, may be necessary before the true nature of the enlargement becomes apparent. When seen early, the use of iodid of potash, in rapidly increasing doses, will speedily cause the total disappearance of the gumma, while if not promptly recognized, extensive destruction of tissue results, as illustrated by the following case:

J. R. Male, aged thirty-nine years. Was seen April 24, 1897, complaining of a bad sore throat of two weeks' duration. He stated that he was subject to attacks of sore throat, the last previous to this having occurred one year ago; but no attack had been as severe or lasted so long as this. His general health was poor, and he would not acknowledge a specific history. The anterior pillars of the fauces and the uvula were a brick-red color, the vessels were injected, and on the right side of the uvula there was a small, excavated ulcer. Both tonsils had entirely ulcerated away, and, occupying their former position, was a foul, cream-like mass, which was in great part removable with forcible spraying. The anterior pillars were intact in their continuity, while the posterior were inflamed and adherent to the pharyngeal wall, considerably narrowing the faucial opening. The diagnosis of gumma of both tonsils was apparent to even superficial examination. The parts were thoroughly cleansed with an alkalin solution and dusted with calomel, the patient in addition receiving large doses of potassium iodid. Four days later he was much improved; the pain had dis-

appeared, congestion had markedly diminished and the white, pultaceous mass had disappeared on the left, while the involved area on the right was considerably smaller. The destruction continued, however, for several weeks, but not enough to impair seriously the functioning power of the parts.

The development of a gumma, with its attendant ulceration, usually occurs several years after the appearance of the initial chancre, and, when destruction of tissue is well under way, frightful ravages are made. The tissues, both hard and soft, disappear within a comparatively short time, and, in individuals already depressed from previous illness, the destructive tendencies almost equal those seen in malignant disease. Caries and necrosis frequently exist and sequestra are formed, while, in rare instances, vessels are opened and fatal hemorrhage may ensue. The ulcerative process may involve adjacent organs, and death has occurred from direct extension to the brain or spinal cord.

Active interference, unfortunately, must not cease when the ulcerative processes are brought under control, as adhesions form in the majority of instances, oftentimes with serious consequences, not only to the respiratory function; but deglutition may be impaired, and repeated operative intervention be required. When the history of syphilis is denied, and all manifestations of the disease have disappeared, changes of the oro-pharynx, and especially of the tongue, will often show that the affection has existed, and a study of this region will enable one to diagnose obscure symptoms, which would otherwise not be recognized.

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Treatment of Indolent Ulcers. Marcuse describes a method of treatment for troublesome ulcers of the leg which he has found more efficacious than elastic bandages or sticking plaster. In cases of large ulcers which have been neglected for a long time, and are constantly pouring out a copious secretion, or callous ulcer with sharp indurated edges, the author has found that the application of wet bandages moistened with Burrow's solution, subsequently followed by the zinc glycerin glue, has an excellent effect. The composition of the solution is as follows: Alum pulv., 5.0; plumb. acet., 25.0; aq. distil., 500.0. A more convenient form for use in general practice would be: Alum, 10 parts; plumb. acet., 50 parts; both powders to be well mixed in a liter of water. The application of this lotion is found to have an astringent action on the ulcer without causing dryness. It is antiseptic, and lessens tension and pain. The moist warmth in the case of the callous ulcer has a powerful effect in lessening the induration and improving the general vascularity of the part. The patient should be kept in bed for some weeks. The method of application consists in cutting a large piece of ordinary gauze dressing, so that the skin for several inches round the ulcer is covered. The gauze is moistened with the lotion and then applied, the whole being covered with gutta-percha tissue. After a short time sulphate of lead is precipitated.

SELECTIONS.

DIET DURING PREGNANCY AS A PREVENTIVE OF DYSTOCIA AND FOR THE DETERMINATION OF SEX.

BY EDWARD PREBLE, M.D.,

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WITHIN the past decade two systems of diet have been perfected by experts, the one by Prof. Schenk, the incumbent of the Chair of Embryology in the University of Vienna, the other, by a practical obstetrician, Prof. Prochownick, of Hamburg; with the design of controlling, respectively, the sex of the child and its size at term. These innovations are not only startling in their originality but have apparently been productive of practical results; yet Prochownick is almost or quite ignored in recent systematic works on obstetrics, and hardly any literature has sprung up about the subject—indeed, it would puzzle the average obstetrician to lay his hand upon Prochownick's original article without a day's search, and as for Schenk's views, the medical man has undoubtedly, in most instances, learned of them through the daily press.

These schemes of diet have no relationship with each other, yet they coincide in requiring highly nitrogenous food. They do not in any way conflict with or overlap each other, because Schenk's diet belongs to the early and Prochownick's to the late months of pregnancy. Schenk's discovery was due to a chance observation, viz.: That normal glycosuria was much more common in women than in men, and also that diabetic women, as a rule, bear female children. Prochownick, on the other hand, was in search of a substitute procedure for premature delivery in narrow pelvis. Might not a child go on to term and have its nutrition so modified that it would possess the viability of a seven-and-a-half months' fetus? A search into literature yielded nothing to Prochownick. The various starvation diets, venesections and other depleting measures of previous centuries, which were intended to simply starve the fetus with a view of forestalling dystocia, are not to be compared with Prochownick's diet, which denies to the fetus nothing which it actually needs, but simply keeps off an excess of weight, of liquids and fat, which is habitually present, but by no means indispensable. Prochownick, therefore, announced that, as far as he was aware, the credit of the idea of a rational anti-dystocic regimen should be awarded to him. I find, however, that he may be both right and wrong in this claim. One Rowbotham, a chemist of London, impelled by two dystocic labors of his own wife, placed her upon a diet which sought to exclude those mineral ingredients which go to make up the osseous structures. This diet consisted largely of substances containing vegetable acids (apples,

oranges, lemons, grapes), which were intended to prevent the precipitation of the earthy salts. In the labor following there was no dystocia, and Rowbotham is said to have been so impressed that he reported the case in a small pamphlet published in London in 1841.

I have never obtained access to this work, and my only information bearing upon it is extracted from the "popular" medical book entitled "Tokology" (revised edition, Chicago, 1898). This book enjoys a considerable vogue among women, almost entirely because of the easy labor promised to all pregnant women who carry out "Rowbotham's diet" during the last two months of gestation. Prof. Prochownick, if familiar with Rowbotham's teachings, would most probably radically disapprove of the principle involved, and would class this form of diet with the starvation regimens of earlier days. There is some superficial, as it were, accidental resemblance between the two plans. In Rowbotham's case the pastry and puddings, and such fattening food, were replaced by the diet of fruits, thus eliminating much of the ordinary carbohydrates, yet no attempt was made to cut down the fluids, a cardinal point in Prochownick's diet. Rowbotham's patient seems to have done largely without any animal food, eating (aside from the fruits) small quantities of bread, rice and potatoes, while Prochownick's diet is notably a nitrogenous one. Both diets agree in the fact that they are not to be entered upon until during the seventh month of pregnancy. All in all, we see no reason why Prof. Prochownick should not receive full credit for his efforts, and, as will appear later, the results from his plan have been uniformly good in about fifty cases of labor occurring in women whose previous labors were notably dystocic.

Prochownick's original article appeared in the *Centralblatt für Gynakologie*, 1889, No. 33, and is entitled "Ein Versuch zum Ersatze der Künstlichen Frühgeburt" ("An Attempt to Replace Artificial Premature Delivery"). A very full abstract of this paper is here appended; which includes a resumé of the conditions which led Prochownick to devise and carry out his diet.

Prochownick says that the question of the advisability of artificial premature labor has been debated for about a century, and is still far from decided. Spiegelberg argued against the operation, and a period of adverse judgment followed, but in more recent years Dohrn, Korn, and Fehling have attempted to justify the procedure. Fehling especially has been able to show by statistics, and, in particular, by statistics which refer to repeated confinements in the same women, that artificial premature birth is feasible, and he has gained numerous supporters. Nevertheless, there are many opponents to the views represented by Fehling, and especially among practicing physicians. The latter do not lay the most stress on the improved chances of the mother, but on the prospect of survival of the child. The prognosis for the child is still admittedly bad. While we have not at present a large statistical material to demonstrate the absolute truth of this statement, every practitioner feels dissatisfied on this score. Children may survive the

direct experience of birth, but many die of secondary mortality or show evidence of imperfect development.

The hoped-for improvement from Cæsarean section does not appear applicable to moderate degrees of pelvis narrowing—the chances of survival are such as must necessarily awaken scruples.

Is there no other way?

Fehling, in his excellent study on artificial premature delivery in Müller's "*Handbuch der Geburtshilfe*," 1889, Bd. III., marvels that the operation was never incorporated into obstetrical practice from simple observation of nature. When the woman with contracted pelvis, overtaken by premature labor, can give birth successfully, how is this brought about? Because the children are smaller and leaner, with bones more tender and more susceptible of moulding. Cannot this favorable condition of the fetus be brought about artificially and labor still go on to term?

Prochownick first received this suggestion in 1887. He was to confine a woman for the fifth time. The four preceding pregnancies had ended respectively in perforation, version, artificial premature delivery (twice). None of her children had survived. When she had become pregnant for the fifth time, confinement due on September 18th-22d, he placed her, on August 1st, upon a special diet, much like that for diabetes, excepting that the abstinence from fluids was even more strongly insisted upon.

The diet was as follows:

MORNING: Small cup of coffee and about six drachms zwieback.

NOON: Any kind of meat, eggs and fish with very little sauce. Some green vegetable with fat added. Salad, cheese.

EVENING: As above with addition of 1½ ounces bread and as much butter as desired.

To be entirely avoided: Water, soups, potatoes, cereals, sugar, beer.

Fluids per day limited to 12 or 15 ounces red or Moselle wine.

The confinement occurred September 20, 1897. Breech presentation—little help required on part of physician. Child female, weight 2,530 gm. (5 lbs.), 50½ cm. long, lean, bones firm, bones of skull hard, yet freely movable. No lanugo hair, but abundant long head hair. Panniculus adiposus everywhere slightly developed, although the osseous system had not suffered. Head circumference, 32.8 cm.; long diameter, 10.0; transverse diameter, 8.2. Large fontanelle, 2.4 long. Breadth of shoulders, 11.4. Child did splendidly on the bottle, fed like a perfectly mature child (250-280 gm. weekly), still lives, is healthy, free from rickets and has recovered from several of the diseases of children.

During the past year (1888) Prochownick had another opportunity to test his diet in a very similar case, while during the present year a third case—in a very near relative—ended happily.

Summing up, Prochownick says that in the first two cases he brought about normal delivery at term purely by dietetic measures, both patients hav-

ing had very bad records as parturients. In neither case had the child suffered from the restricted diet of the mother, the bones being notably in normal condition. Children previously borne by the two women were above the average in weight and had a marked development of subcutaneous fat.

In the pregnancies, while upon the special diet, the amount of amniotic fluid was small. Prochownick again emphasizes the fact of the extraordinary capacity of the skull-bones for moulding.

The third patient had a rachitic pelvis, but no history of dystocia—probably a primipara, but this fact was not stated. Her case was equally successful, but the result was naturally less impressive than that in the previous cases, both of whom had repeated unsuccessful terminations to their labors.

Prochownick states that this simple management requires only a little will power on the part of the mother. Despite the smallness of the published material, he feels satisfied that he has devised a valuable measure for the avoidance of artificial premature delivery.

A search in literature from antiquity to the present time appeared to show him that he is entitled to the sole credit for the dietetic management of dystocia of a certain kind and degree.

We further append an abstract of an article by Horn, which gives the status of Prochownick's diet up to the present year. Horn's article occurs in the *Monats. f. Geb. u. Gyn.*, VIII., and is entitled "Ueber die Erfolge de Prochownickschen Diat . . . bei engem Becken" ("Success of Prochownick's Diet . . . in Narrow Pelves").

Horn describes the disadvantages of Cæsarean section, symphysiotomy, perforation and induction of premature labor for both mother and child. Premature delivery gives the most favorable figures, the mortality of the mothers being only slightly higher than in normal delivery. The mortality of the immature child is high. Therefore we are justified in attempting to improve the statistics of labor in narrow pelves up to the point of equality with those of normal labor.

In the beginning of this century it was attempted to influence the nutrition of the fetus in utero by venesection, purgatives, and scanty diet; and some of the opprobrium attached to these procedures will be transferred to the procedure inaugurated by Prochownick; but there is a great difference between the unscientific efforts of that remote period and the physiologically sound plan of Prochownick. The degree of success attained by the latter is sufficient argument for the soundness of his theories. Up to the present time Horn finds the following record of successful cases:

Prochownick, 13; Sureicki, 4; Hoffmann, 3; Haspels, 4; Josephson, 2; Brehm, 1; Eisenhart, 1; Donath, 1; Van de Poll, 1; Leusser, 1; Florschütz, 3; Reijenga, 9. To these 43 cases Horn adds another, while Hucklenbroich recently reported three cases, the total material to date comprising therefore 47 cases. Of this number *not a mother nor a child was lost*.

Of the 47 cases there was but a single possible failure—Prochownick's eleventh case, an account of which was furnished to Horn; in this case the woman was very fleshy, and gained 22 pounds during the pregnancy. The diet in this case evidently failed to prevent the fattening of the child. However, the woman persevered with the diet during her next two labors, and the result was completely satisfactory, as she did not again take on fat during the pregnancy.

Horn's case is as follows:

Patient, age thirty-six, four-para. General narrow pelvis. Previous labors, 1. Forceps, severe case. 2, 3, Artificial premature birth—both children died.

Began diet between six and seven weeks before expected confinement.

Spontaneous, easy labor. Length, 55 cm. Weight, 4,100 gm. (8 lbs.) Placenta, 550 gm. Good amount of liq. amnii.

Notwithstanding the good practical results, the child was quite plump. This paradox is explained by Horn as follows:

The fetus should have weighed about 4,000 gm. at the time the diet was begun. The woman was in poor circumstances and her usual diet consisted of the very foods most interdicted by Prochownick (soups, potatoes, bread, etc.); the child, therefore, was well under the influence of this ordinary regimen and Prochownick's diet, begun at the late day, could only keep the child's weight from further increase.

Difficulties in carrying out the diet are expense, necessity of strong will on part of the patient, and choice of right time. In lying-in institutions, patients have to be isolated at meal-times. Hardest of all is the abstinence from fluids, especially during the early days.

In the discussion which followed the reading of the paper, attention was called to the fact that tuberculous mothers and victims of hyperemesis incoercibilis had often borne plump children. Horn rejoined that Prochownick's diet was not a starvation diet. The tuberculous mother received an abundance of water, and carbohydrates were not forbidden. The cases are too dissimilar for comparison.

In answer to a question about the sex of the child under the diet, Horn replied that no influence in this direction had been noted.

Horn further claimed that pains were better under the diet, because the latter prevented the formation of interstitial fat in the myometrium.

Schenk's discoveries can never be incorporated into routine obstetrical practice on account of the great number of quantitative urinary analyses involved. The rationale is extremely simple. In the first place, it is a fact that very many individuals, particularly women, and especially women who are near menstruation (just before or after), excrete sugar normally in such minute quantities that it requires especially delicate tests (phenylhydrazin) to demonstrate its presence. Schenk's experience has shown him that women who do not normally excrete sugar, and especially those whose

sugar may be made to disappear from the urine by adhering to a highly albuminous and fatty diet during the periods of ovulation, impregnation and first three months of gestation (up to the time of the differentiation of sex), are practically certain to bear male children. If the sugar cannot be made to disappear by diet, the chances are in favor of the birth of female children, yet this is not certain—in fact, there is absolutely no plan by which the sex of female children can be controlled.

In conclusion, it can hardly be doubted that in future, diet in obstetrics is destined to play a part akin in importance to diet in obesity, diabetes, etc. There are drawbacks to the popularity of both Schenk's and Prochownick's management. The former requires a year to establish its value in a given case, while the cost of the repeated quantitative examinations and the trouble entailed upon the mother tend to limit its sphere to those of the wealthy, who, above all things, desire male issue. Prochownick's diet, insisting, as it does, upon rigid abstention from excess of liquids, becomes a hardship on the pregnant female who is accustomed to yield to the slightest craving in dietetic matters; and has, besides, to compete with many rival plans of treatment for dystocic conditions, especially symphysiotomy, which operation has been revived since Prochownick first set forth the principles of his diet. Despite these drawbacks, we have little doubt that the question of diet in obstetrics will shortly discover its proper field of usefulness.—*Obstetrics.*

Microcidine. McKay (*Intercolonial Med. Jour.*, Mar. 20, 1899), as a result of 3 years' use, praises this agent as a germicide in obstetrical work. It is used in the strength of $\frac{4}{1000}$ as a vaginal or intrauterine douche. The advantages claimed are: (1) It is not toxic; (2) it does not coagulate albumin; (3) excepting aluminum, it does not attack instruments; (4) as a germicide it ranks next to bichlorid; (5) its solutions have an oily feel. It is prepared by dissolving 1 part of caustic soda in 2 of water. To this is added 2 parts of naphtha B, and the fluid evaporated. The solid microcidine thus prepared is stored in dark-colored bottles.

Artificial Abscess in Pyemia. Forchier, in Vienna (*Corres. Med. Press and Circ.*, Apr. 5, 1899), continues to recommend this novel mode of combating septic conditions. Two drachms of oil of turpentine are injected into the calf of the leg. The irritation produced culminates in the formation of a large abscess, which it is advised to speedily open. While it is apparently of greatest value in abscesses about the genitals, abscesses in connection with typhoid, erysipelas, osteomyelitis, pneumonia, etc., have, it is claimed, been also treated thus with very favorable results. From the time of the turpentine injection the pyemic signs are said to cease, and the recovery of the patient, without relapse, follows.

TALKS TO GENERAL PRACTITIONERS.

THE MOST IMPORTANT REQUISITES TO A CORRECT DIAGNOSIS IN CHRONIC DISEASE.¹

BY BOARDMAN REED, M.D.,
of Philadelphia.

ALL the chronic diseases that result in much impairment of nutrition, whether the patients be infants or adults, have many symptoms in common. They are for the most part characterized by debility, poor digestion, more or less anemia, disturbed cardiac action, insomnia or broken sleep and derangement of the bowels in the direction of either constipation or diarrhea.

Symptoms alone, therefore, are not conclusive as to the diagnosis. There is often, to be sure, some one symptom—such as the rapid or embarrassed breathing of severe lung troubles, the jaundice observed in obstructions of the bile ducts, and the peculiar cachexia of malignant disease—which, while not really pathognomonic of the involvement of any one organ in a definite manner, may yet point pretty surely either to the region involved, or else to the general character of the affection.

Many of you have made the diagnosis of locomotor ataxia and of spastic paraplegia by the gait alone, as well as that of arterio-sclerosis by the tortuosity of the temporals. Yet it is not wise to follow the example of those quacks who claim to be able always to diagnosticate the diseases of their patients without examining them and without asking a single question, notwithstanding that such a hasty diagnosis, when proved to be correct, rarely fails to make a prodigious impression upon both the patients and their friends.

In the long run, it will be far more politic, as well as more honest and scientific, to obtain the fullest possible history of the patient, with the salient points of the family history, and then to make an exhaustive physical examination. In this way only can the best results be accomplished. Even when there is apparently a manifest cause for the symptoms, such as syphilis or advanced tuberculosis, at any age, or rickets or enterocolitis in childhood, it will be safer to take nothing for granted, but, in all serious cases at least, to go carefully over the entire body, including certainly the liver, stomach, spleen, heart and lungs, and in addition to test the more important reflexes and the urine. Whether you should also obtain specimens of the blood, and of the stomach contents after a test meal, for qualitative and quantitative determinations of their condition, must depend upon the nature of the case. In obscure chronic states of ill health, a blood

¹ Read by request before the Academy of Medicine, Atlantic City, N. J., June 9, 1899.

count and estimation of the percentage of hemoglobin are always desirable, even if not always indispensable. When there is any question as to the existence of malaria, it should be settled positively by a microscopic examination of the blood for the plasmodium. To inflict upon patients a course of full doses of quinin as a therapeutic test is rarely, if ever, justifiable nowadays, since it is unnecessary, and often does harm.

As to the stomach, it is a regrettable fact that not only many excellent practitioners, but also consultants, fall far short of their duty when this organ is concerned. It is true, of course, that time often fails for a full and thorough investigation, according to modern methods, of all the organs that are open to suspicion; and it is also true that patients are not always willing to pay even much less than proper fees for a part only of the examinations that our whole duty would require us to make or to have made. Some must often be omitted for one or both of these reasons. But, when a patient has already suffered long and been medicated persistently and unavailingly on account of symptoms pointing more or less directly to the digestive organs, there can be no adequate excuse for neglecting longer to interrogate these by the exact methods which are now at our command. The same is true of even stubborn cases of neurasthenia that do not, within a reasonable time, yield to treatment addressed to the nervous system, since a considerable proportion of such cases result directly from the malnutrition produced by gastro-intestinal disease, especially when several of the abdominal viscera are dilated or out of place.

I have seen numerous wretched invalids who had undergone examinations by prominent men, taken one or more rest cures, and, in a number of instances, had the benefit of treatment at foreign spas during periods of bad health lasting for years, without ever having had even one test made of their stomach contents, though, as the event proved, they were suffering from an acid gastric catarrh with such an enormous excess of HCl as to have damaged seriously the mucous membrane of the intestines. Several of such patients, who had for an equal length of time been taking medicines from various able physicians, were found to have been afflicted all the while with the group of symptoms very common in women, especially (though often met with also in men), known as enteroptosis or Glenard's Disease, in which a number of the viscera, including usually one or both kidneys, the stomach, transverse colon and small intestines, have prolapsed, with the result that there has nearly always developed stubborn constipation with many aggravated nervous derangements, besides marked anemia and malnutrition, dependent probably upon the disturbed relations of the intra-abdominal organs and the abnormal traction upon various nerves and nerve centers. This condition in most of the cases had not been recognized.

And yet these displacements, as well as the dilatations of the stomach and colon that often form part of the same symptom complex, may generally be diagnosticated at the present day without the help even of a stomach

tube, as I fully pointed out in a paper on this subject nearly four years ago,² and again in my talk in the INTERNATIONAL for January, 1899.

In mapping out the boundaries, especially those of the stomach and colon, the simple methods fully described in the articles just referred to will yield accurate results in nearly all cases without a resort to any intragastric appliances. With the help of inflation by means of carbonic acid gas, liberated in the usual manner by a solution of sodium bicarbonate, followed by one of tartaric acid, and with the use of the now familiar auscultatory percussion and auscultatory friction—both described in the talk above mentioned—the task becomes a comparatively easy one.

The appendix should be palpated and its condition and position determined in every thorough exploration of the abdomen at the same time that the position of the kidneys, stomach, etc., is made out, since it is often found to be enlarged and tender on pressure as the result of a chronic catarrhal process, especially when there is, or has been, much catarrh of the colon.

The tongue, even though silent, may tell us something concerning the health of the alimentary tract, but it is often misleading. It may be clean with a diseased stomach, or *vice versa*, but is rarely much furred without at least a disturbance in the tract somewhere. It probably reflects more accurately the condition of the duodenum than that of either the stomach or liver.

Never fail to examine the teeth. The German proverb, "Gut gekaut ist halb verdaut" ("Well chewed is half digested"), is true as Gospel, and a patient cannot well chew without good teeth.

The condition of the nose and throat is of prime importance, in children especially, since in them stenosis of the nares causes mouth-breathing, and serious impairment of the health may follow; but even in adults catarrhal affections of the upper air passages often eventually progress by continuity of tissue to the esophagus, stomach and duodenum, if not, indeed, to the entire alimentary canal. It is rare to see a stubborn old case of dyspepsia in which there is not chronic nasal catarrh as well, and very often a catarrh of the stomach is already demonstrable when the case comes under treatment.

The state of the ears does not, as a rule, have an important bearing upon the general health, but the eyes are deserving of more attention from clinicians generally than they receive. Variations in the field of vision may point to hysteria, retinal changes to Bright's Disease, diabetes, meningitis, apoplexy, intracranial tumors, and the reactions of the pupils to light and to accommodation in connection with absent knee-jerks are diagnostic in tabes dorsalis; while defects of accommodation, by causing eye-strain, probably rank next after indigestion and lithemia in the etiology of headaches, insomnia, and many otherwise obscure nervous phenomena.

² "The Diagnosis of Changes in the Size, Position and Motility of the Stomach, in Cases where Intra-Gastric Instruments cannot be Used." Medical News, January 18, 1896; and Berliner. klin. Wochenschr., 1896, No. 43.

The rectum, prostate gland, urethra, bladder and the uterus and its adnexa are of less vital importance than a number of other organs, but should be examined when the symptoms point to them as probable offenders. It is worthy of particular mention that the uterus will nearly always be found to be displaced whenever the lower boundary of the stomach, as a result of either ptosis or dilatation, is much below the level of the umbilicus. This is simply a consequence of the prolapsed colon being almost universally pushed down still lower by the abnormal pressure from above. Either the stomach or colon may rest directly upon the uterus, especially when full.

There should, of course, be a careful inquiry into the condition of the heart and arteries in all cases of chronic disease, especially when there is an abnormal pulse or any symptoms referable to the circulation; and the lungs would naturally be gone over thoroughly whenever there is chronic cough or dyspnea, but they should never be neglected in any pronounced case of emaciation, debility or anemia. The microscopic examination for tubercle bacilli is important, but it is more important still to be able to recognize a tubercular deposit in the apex in an early stage before the bacilli can be demonstrated, and when, by means of the prompt institution of the proper hygienic treatment, a cure can usually be promised.

The skin is by no means a negligible quantity. In children especially it is to be most carefully scrutinized all over, and in many puzzling cases of obscure chronic disease in adults an examination of the entire surface of the body with all the coverings removed, part by part, would conduce much to a solution of the difficulty.

The stools are usually inspected with much care and regularity in infants and ought to be in older patients, when the liver or any part of the digestive system is at fault. Microscopic examinations of the feces also yield valuable results in numerous cases.

The urine should be examined most carefully in every case of chronic disease, with few exceptions, from infancy to old age, and when it is one of unusual importance, or much obscurity, many more tests should be made than are customary. Next after the tests for albumin and sugar, perhaps the most necessary one is that for indican, and it is very easily and quickly made. That for the aromatic sulphates is no less important, but is more difficult. Either indican or aromatic sulphates in large excess must raise a strong suspicion of intestinal disease. The total amount of solids passed in twenty-four hours is roughly ascertained by a very simple calculation, and affords valuable knowledge as to the renal adequacy. Another unusual test that furnishes most useful and, I may even say, indispensable, information in all cases of malnutrition, whatever the age of the patient, is that for the total acidity—the total amount of acid elements of all kinds, free and combined as salts.

This will be found to vary in neutralizing power in adults all the way from the equivalents of 5 or 10 c.c. to 70 or 80 c.c. of the one-tenth normal

solution of caustic soda in each 100 c.c. of urine. A very low percentage of acids is frequently seen as a result of over medication with alkalin drugs or the stronger alkalin waters. A high acidity, on the other hand, is very often found in consequence of much fermentation in the stomach or intestines. It is usually present before the development of rheumatism especially, and its persistence threatens danger to the system generally through a too great diminution of the alkalinity of the blood.

A determination of the amount of uric acid in the urine of twenty-four hours frequently affords the key which unlocks a difficult problem.

It is scarcely necessary to remind an association of physicians, at this day, that a microscopic examination of the urine is in most cases quite as necessary as the usual chemical analysis, if we would learn the whole lesson that this most important of the excretions can teach us. Even in the absence of albumin, hyalin casts are danger signals at least, while epithelial and granular casts are evidence usually of serious structural lesions. A gonorrhea cannot be certainly differentiated from other purulent urethral discharges except by the gonococci, and tuberculosis of the genito-urinary tract is often revealed by finding the bacilli in the urine. Spermatorrhea, though not as common or deadly as the quacks pretend, is a real disease which is often overlooked, and cannot be demonstrated without the help of the microscope. I recently saw a patient who was verging into melancholia on account of this condition, complicated with hyperchlorhydria and dilatation of the stomach. Besides having spent some months in a large sanitarium and seen a number of eminent neurologists in different cities, he had recently been through two rest cures under physicians of the highest standing, and yet none of these three causes of his depression seemed to have been recognized. The gastric condition surely had not.

In referring to the ability and high standing of the previous medical advisers in this and other cases, I do not wish to be understood as attempting to make invidious comparisons or as indulging in criticisms of physicians most of whom are my seniors, and some of them my attached personal friends, whom nothing could induce me knowingly to injure even by indirection. My thought plainly expressed is, that the most expert and experienced diagnosticians in the world are almost certain to overlook occasionally important abnormal conditions in the abdomen unless specially trained in the recent methods of studying that region, just as most practitioners not trained especially in pelvic work are liable to go astray in that particular field.

This imperfect summary of the most important methods and aids by which an approximately accurate diagnosis can be reached in nearly all chronic diseased conditions pertaining to internal medicine, may seem at first discouraging to us as busy practitioners, since we meet with so many cases in which it is entirely impracticable to avail ourselves of even one-third of them. But not all these examinations are necessary for every case, nor

need even all the appropriate ones in any case be done at one time. It should, it seems to me, be a comfort to us, and a cause of pride in our magnificent profession as well, to know that the helpful possibilities are now so vast that there are few of our most perplexing cases that we cannot finally master.

PRESENT-DAY REQUIREMENTS IN THE MANAGEMENT OF PREGNANT WOMEN.

BY EDWARD A. AYERS, M.D.,

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MOST busy practitioners, and all able practitioners, are more than busy, if they try to keep up to date, and are unable to thoroughly sift the conclusions that are voiced by the vast number of papers on any and all topics on practical medicine which now flood the literature of the day. They are, if general practitioners, driven to head-line reading, or abstract skimming; and even then seldom get "court judgment" as to what is reliable and best. Obstetrics has undergone many changes of procedure of late, some of which are still lacking in definement.

In the care of pregnant women before labor, the most general and remarkable advances have been in the expansion of ante-partum examination and in consequence greater achievement in prophylaxis. There are no opposing parties on these matters. The obstetrician who poses as an expert, and does not employ early diagnosis and prevention, is unanimously regarded as incompetent.

Hemorrhage from placenta previa and eclampsia from—well whatever it may be—are the first dangers that should be given consideration when one is engaged by a pregnant woman. We will not catch many cases of placenta previa by early examinations, or before they declare themselves by a blood show. Many able minds have been busily engaged endeavoring to locate the placenta, with but poor results. Leopold has shown by observations in Caesarean section when the uterus was exposed, that the Fallopian tubes lie more anterior than usual when the placenta is attached to the posterior half of the uterus, and, to a less extent, posteriorly when it is attached to the anterior half.

By the vagina we may sometimes feel the placenta when it is lying over the internal os. Patients with placenta previa should either be at all times (as in a hospital) within the *immediate* reach of a physician, or undergo induced labor.

In the prevention of eclampsia the latest views recognize that the disease is one of possibly special toxin development, but certainly the reten-

tion of poisons that should be escaping from the body through the eliminatives. Hence the practice of testing the urine for the reduction in the amount of urea excreted.

It is assumed, with very general approval, that while urea may not be the eclamptic generator, its lessened elimination bears much the same relation to eclampsia that falling of the barometer does to an approaching storm. Recent text-books, such as Jewett's and Hirst's, give excellent descriptions of the methods of testing the "urea wave."

The older tests for albumin, casts, and reduction in quantity, have lost none of their weight of importance as fore-signs of eclampsia. The most prominent adjuvant in treatment both for a threatened attack and one that supervenes is hot saline solution, or artificial blood-serum. The usual solution employed is a sterilized $\frac{6}{10}\%$ solution of salt in hot water, which can be given most easily by injection into the colon through an eighteen-inch tube, and limited in quantity only by the ability of the patient to retain it.

This solution is now extensively used in cases of severe hemorrhage, and is probably the most valuable article in the nature of a remedy taken up by obstetricians in this generation.

Ante-partum examinations are of great assistance in the efforts we are all making to reduce the evils of mal-positions and dystocia. It is a perfectly conservative statement that fully one-half the improvement in the results from these difficulties is obtained where the obstetrician employs careful and skillful examinations before labor.

Diet has received more attention of late years than formerly, and the recent work of Schenk, who claims that sex can be made a matter of selection, in so far that if sugar shows in the urine a female may be expected, and treatment that excludes all trace of sugar, begun before impregnation, will result in male generation, has accentuated interest. Prochownick promulgated some years ago the claim that dystocia could be prevented by such diet as would lessen bone development and hardening, and fat formation in the fetus. Prochownick's theory has not received the consideration that it probably deserves, partly because it calls for an early observation of cases, which is prevented largely by the bad habit of many patients in delaying the engagement of their physicians for confinement. Schenk's claim has not yet been accepted by our leading investigators, as of course it could not be, for much time is required to test a method that calls for treatment for a *prospective impregnation*.

The numerically most important topic in obstetrics—sepsis—has only recently seen two important changes of view: First, in the matter of prevention, and second, in treatment. It is now accepted that the normal condition of the vaginal area is one of asepsis, and that the secretions are themselves germicidal.

Vaginal douching before or during labor is therefore quite generally not employed. But the introitus and vulvar surfaces are not aseptic and

are not germicidal, hence they should be most carefully cleansed before any examinations are made. The best method of making digital examinations is to cleanse both vulva and one's own fingers, then hold the lips of the labia minora apart while introducing the fingers of the other hand. This method lessens the liability of carrying vulvar germs into an aseptic vagina.

Some vaginae are in a septic condition and should be cleansed; but they should be selected individually for douching and scrubbing, and not cause the clean ones to suffer.

In treatment of puerperal sepsis, we seem to be rather worse off than we thought we were a year or two ago. Anti-streptococcic serum is practically discarded as useless, and no other article can be claimed as of specific value. Blood flushing with saline solution, local surgical cleansing and the old friends of the pharmacopeia are the most that can be mentioned. Peri-uterine packing with iodoform gauze after dissecting the cervix partially per vaginam is being tried, but no opinion can as yet be given upon its merits, its idea being that the lymph channels, the chief means of communication of the septic material with the uterine body and adnexa, are thus closed.

SYPHILIS—THE CHANCRE.

BY J. D. THOMAS, M.D.,

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THE diagnosis of syphilis is a serious and important matter. A patient should never be pronounced syphilitic unless the attendant is sure of his diagnosis. There is no man more miserable than the syphiliphobic. He is much more so than the true syphilitic. The most annoying patient one has to contend with is the one who has been wrongly pronounced syphilitic. If an acne spot, an eczematous eruption, or any other lesion, appears upon the skin, it matters not how trivial, he rushes to the physician with the tale that he is now positive that he is a sufferer from the disease. With all one's persuasion, it appears impossible to convince him otherwise. A case in point: A gentleman, a married man, lapsed from the correct path for the first time, and, as he was afterwards very apprehensive and observing, he noticed one day, about a month after the alien intercourse, a few pustules upon his body, when he rushed to a physician, who pronounced it syphilitic, without seeking for the initial lesion, and placed him upon specific treatment. To find a syphilitic lesion upon the skin at this period would be as probable as to find a shining sun at midnight. He shortly afterwards consulted his family physician, who assured him that he had not contracted the disease. To further convince him, his family physician referred him to

another physician and myself for an opinion. That the patient did not have syphilis was plain. Although this incident occurred three years ago, he still haunts my office with regard to his "syphilis."

As a rule, the diagnosis of syphilis is not difficult, especially if observed from the beginning; for the evolutions of the various manifestations are unerring: First, we have the initial lesion; second, the adenopathy; third, the eruption, with the other concomitant symptoms of each step of the disease. Thus it will be seen that the clinical history is important.

The initial lesion of acquired syphilis is the chancre; a lesion that becomes indurated from hyperplasia of connective tissue—this hyperplasia being the result of the irritation set up by the poison (micro-organism) of the disease. The induration is characteristic, the lesion is of slow growth, ten days to three weeks intervening before it is appreciable. The books give us a case as late as seventy-five days. Clinically, such cases can be ignored. In the whole category of diseases there is hardly one that is more uniform in its development than syphilis. In our dispensary work we meet with apparent anomalies; but when the same patients are interrogated at another time we get an entirely different story. The poison enters the system through a solution of the continuity of the body envelope; sometimes through a slit on the corona glandis, produced by a hair, patients believing the slit to be the entire trouble; at other times through a limited abrasion, or the epithelium, during coitus, may be rubbed off of one-half or more of the corona, and, as a result, there will be an induration (chancre) involving the entire abraided surface. Where more than one solution of continuity takes place, there may be more than one chancre (exceptional). The chancre is usually found upon the genital organs; but as it may appear elsewhere upon the body, the fact must always be borne in mind.

The abrasion through which the poison enters very often heals over before the patient presents himself, then we have what is called the indurated papule. If this indurated papule is kept under observation, and no specific treatment instituted, as the piling up process advances, the circulation in the papule is interfered with, and we again have an abrasion or erosion on the surface, so that we have virtually but two varieties of chancre, viz., the non-eroded and the eroded. Now, the eroded chancre can be sub-divided into as many varieties as the observer is prolific in his imagination. There are two varieties, however, of the eroded chancre that are so characteristic that it is well, in this place, to designate them. One is where the induration or infiltration is not deep in the tissues, but occupies the skin mainly, and covers a good deal of surface, as much as an inch in diameter at times, with little or no secretion, but with some scaling, and when the margins are compressed between the thumb and index finger a sensation is imparted as if there was a piece of parchment imbedded in the skin; hence the name—"parchment variety." This variety is usually found upon the integument of the penis or scrotum. The other is usually called the "Hunterian"; a

chancre with the margins markedly indurated and elevated, the ulceration eating down into the little mass and forming a funnel, or V-shaped cavity. This variety is found upon some part of the glans penis.

Chancres, if not irritated, have a limited amount of secretion, the secretion being of a sero-purulent character. Occasionally the chancre is so insignificant that the patient is not aware of its presence. Patients sometimes present themselves with the secondary eruption, and, at the same time, deny the presence of a sore upon the penis. In these cases, after retracting the prepuce, to the patient's surprise, a sore, indurated, small, with slight secretion, would be found in the sulcus behind the corona. In these cases the insignificance of the local lesion is due to the fact that the prepuce prevented undue irritation. When the chancre is situated upon the mucous surface of the prepuce, retraction of the prepuce becomes difficult or impossible; but the chancre can be detected by the induration experienced on palpation, and the small amount of discharge from beneath distinguished it from the chancroid. It is sometimes months after the beginning of treatment before the prepuce returns to its normal suppleness and can be retracted over the corona.

In the female it is more difficult, as a rule, to get a good demonstration of the chancre. If it is within the introitus vagina it may resemble a mucous patch, moist papule or abrasion. Again, innocuous abrasions within the vagina are frequently met with, so that when specific trouble is suspected close observation is necessary; *e. g.*, Mr. F. came to me, on January 8th, with a sore (chancre) which he had observed for two weeks. On the thirteenth of the same month, he sent his wife. On the latter date my notes say: "On either side, at lower portion of labia minora, an abrasion exists, as yet nothing characteristic. Cervix and vagina free." Mrs. F. was examined again on January 31st, when it was found that the abrasion on the right side had disappeared, while the one on the left side was becoming indurated, and the glands in the groin on the same side were enlarging. When the chancre occurs upon the labia majora, owing to its exposure, and at times want of cleanliness, it may acquire large dimensions. At this location it may assume the size and shape of a butternut, with the surface covered with incrustation. With ordinary care, when the chancre is situated upon the clitoris, vestibule, labia or cervix it can be readily recognized.

When the chancre is extra-genital, and obscure, it may be located by ascertaining at what region the glands have first enlarged, and at this point they may be found exaggerated as compared with the other glands of the body. In one case I was enabled to locate the chancre on the anterior pillar of the fauces by the exaggerated enlargement of the glands on the same side of the neck. The patient had the secondary eruption, but no genital chancre.

If the chancre is under observation from an early period it will be found

that the glands leading to the body from the chancre will gradually enlarge, will be painless, indolent, slightly movable, and, if the patient is informed of his trouble, he will lose in flesh and become somewhat anemic. This is due, in all probability, to shock and worry, for in patients who come for advice with regard to their skin lesion and not knowing its character, we do not find these conditions.

The first period of incubation is that period from the reception of the poison until its effects are observed as a chancre; the second period of incubation follows this, and covers the period during which the lymphatic glands passing from the chancre enlarge, and terminates when the poison enters the blood, which is evidenced by the eruption upon the skin, inflamed fauces, slight elevation of temperature (although it sometimes reaches as high as 104° F.), malaise, etc. If the exact date of the reception of the poison can be ascertained, the eruption will almost unerringly appear *about* sixty days thereafter.

The only local treatment a chancre requires is cleanliness. Cauterization with nitrate of silver, nitric acid, etc., is worse than useless. The only impression that can be made upon the chancre is by constitutional treatment. Excision of the chancre will not prevent infection, and is of doubtful utility.

FUNCTIONAL DISTURBANCES OF OCULAR MUSCLES.

BY WALTER L. PYLE, M.D.,

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Part III.—*Treatment.*

As refractive troubles are the chief causes of heterophoria, in every case the refraction should be examined under a mydriatic and the ametropia correction ordered. In prescribing the correcting glasses, we must bear in mind the muscular condition. If the patient has exophoria and is hyperopic, we order at first a weak correction, hoping to spur the adductors up by allowing some accommodative strain. If the patient has esophoria and is hyperopic, we order a full correction, hoping to relieve all strain on the accommodation and hence on the associated convergence. In myopia, I disregard the muscle-balance in prescribing glasses, and even though the patient is exophoric I never order a full correction for constant use. The strain on the undeveloped accommodation and convergence produces such discomfort that I have long ago given up the theory of full correction in exophoric myopes as impracticable.

In the great majority of cases, esophoria and exophoria disappear or are sufficiently modified by the simple correction of the ametropia to cause cessation of such reflex symptoms as headache, nausea, indigestion, vomit-

ing, and various other nervous phenomena. I cannot too strongly call attention to the necessity of careful and complete correction of any existing astigmatism, incorporated in the lenses for the hyperopia or myopia.

If the general vitality is impaired we cannot expect the ocular musculature to improve, even though the correcting glasses are applied, unless steps are taken to improve the systemic condition. Good food, abstinence from near work, plenty of out-door exercise and tonics are among the measures indicated. Increasing doses of tincture of *nux vomica* after meals seem to do good. If the patient is very weak and debilitated it may be necessary to allow the use of correcting prisms until the general condition has improved. However, in such cases only a partial prismatic correction should be worn, and this must be gradually reduced as soon as possible. Tenotomy should always be a last resort.

Insufficiency of Convergence and Exophoria.—One of the greatest causes of muscular asthenopia is insufficiency of the convergence with or without accompanying exophoria. As already stated, usually the prescription of proper glasses, temporary abstinence from near work, and general hygienic and tonic treatment will suffice to produce relief from the asthenopic symptoms. When, however, these measures do not afford relief, I resort to ocular gymnastics with prisms after the method of G. M. Gould, of Philadelphia.

Patients suffering from insufficiency of the interni are chiefly persons whose habits and occupations cause excessive use of the eyes. The intense headaches and gastric neuroses accompanying this defect call for a special mode of treatment. To prescribe prisms is only affording a crutch and encouraging the insufficiency. Permanent cure can hardly be effected by such treatment. The principle of tenotomy in exophoria is to weaken a strong or normal muscle to such a degree that it will be equally insufficient with its defective fellow. Such treatment as this can hardly increase the adducting power, the deficiency of which is at the root of all the uncomfortable symptoms. Advancement of the interni does not secure increased innervation.

The skepticism as to the value of ocular gymnastics in cases of insufficiency of adduction is largely due to the fact that the treatment has not been carried out rationally and systematically, and we especially call the student's attention to the proper *modus operandi*. For minor cases the "thumb exercise" is of value. This consists of exercising the convergence by drawing a thumb gradually toward the bridge of the nose, meanwhile trying to maintain a single image of the finger. The thumb should be withdrawn immediately when diplopia results. This exercise should be repeated a dozen times at each exercise, and the exercises should be used several times daily.

The more important method is that by *graduated exercise in overcoming successively higher prisms, bases out*. The following is the usual mode of treatment: The amount of exophoria is noted, the abduction and adduc-

tion is then measured, followed by the measurement of the convergence-stimulus adduction. This is obtained by coaxing the patient to overcome as strong a pair of prisms, with the bases out, as possible in the following manner: A pair of prisms just a little stronger than the normal power of adduction are placed in the trial-frames; these will, of course, cause diplopia for the distance, but not, as a rule, at the near point. The patient is then requested to fix his gaze on a mark made on a card (a cross or a dot seven or eight mm. in size), which is held at the reading distance or nearer. The card is then gradually withdrawn to a small gas-jet, the size of a candle-flame, about six meters from the patient's chair, the patient endeavoring and being encouraged to maintain a single image all the time. When this point is reached, the patient can transfer his gaze and fuse the double image of the flame instead of the mark on the card. This maneuver is then repeated with stronger pairs of prisms until the limit of adduction is reached. It will generally be found that a pair of 8° or 10° prisms is as much as can be overcome at first, but if the exophoria is not too great, it is seldom that, after a few trials, a patient cannot fuse the image of a candle-flame at twenty feet with this handicap.

The examiner should then prescribe a pair of prisms, bases out, suiting the strength to the indications, giving slightly less than the full amount of adduction. It is of great importance to have the prism set in a well-adjusted interchangeable prism-frame. The patient is instructed to place himself twenty feet from a flame, and endeavor to fuse the double image; if, as is usual, it is impossible for him to fuse at this distance, he must approach the flame until he gets the single image, then walk backward, keeping his gaze steadily fixed on the flame, until he reaches his starting-point. This is much more difficult for the patient than having some one withdraw the marked card from the near point to the flame; so that whenever feasible it is preferable to call in the assistance of a second person, particularly in the earlier days of this treatment. This assistant, unfortunately, is not always available. If the image is still single, the patient is told to hold it steadily so for about a quarter of a minute, then to raise the glasses and gaze at the flame with naked eyes for the same length of time, and repeat this ten or twenty times three times a day. The patients are instructed to continue this exercise for a week. During the first few days, complaint may be made that the exercise is difficult and tires the eyes, but before the week is over it becomes easy. At the next visit the strength of the prisms is increased and the exercise continued at home, and at each succeeding visit an addition of about five degrees may be prescribed until the patient can, without the slightest trouble, overcome a pair of 25° or 30° prisms. Patients can sometimes be educated to overcome a combined prism-strength of over 100° . In such cases the ability of convergence is remarkable. An arrangement may be effected with an optician to lend prisms and make the necessary changes for a very moderate charge, and the

patient is thus saved the expense of buying a whole outfit of glasses that would be useless to him after a few weeks.

In moderate degrees of *exophoria*, or in cases in which there is no exophoria, but a lack of power of convergence, the symptoms disappear after the second week; but this is no indication to stop treatment, for, unless the adduction is forced up to 50° , or 40° at least, the trouble is likely to return; if the patient can overcome a pair of 25° prisms, the cure is probably permanent. The higher the degree of insufficiency, the more necessary does it become to force up the power of convergence.

Insufficiency of adduction is not necessarily accompanied by exophoria; it is not usual, but still quite possible, to find a lack of converging power in cases of esophoria.

Occasionally even a case of divergent strabismus may be cured by prism exercise; but a partial tenotomy of the external recti, one or both, may accelerate the cure and save much valuable time. It is a safe rule to follow, never to over-correct by a tenotomy, and to follow up the operation immediately with prism exercise—"not to wait for the tenotomized muscle to unite in its new position and later on contract, but stimulate the internals to fight and push their advantage to victory while their opponents are nursing their wounds." (Bennett.) Much, however, can be done without operation, and many a nervous woman will go through months of treatment rather than submit to the slightest cutting procedure.

It often happens that in cases of *mixed muscular defect*, by correcting the ametropia and properly exercising the adduction with prisms, not only is the adducting insufficiency remedied, but general muscular balance is restored and all the asthenopic symptoms relieved.

Esophoria.—As we have no stimulus for bilateral divergence in the human, prism-exercise is of little avail in esophoria. Besides the attempt to strengthen to any marked degree the abductors, which have no such important functions as the adductors in the convergence for near work, would hardly be of use. The great trouble is generally with the adductors. They are on constant tension usually on account of uncorrected hyperopia, causing ciliary strain. The rational treatment of esophoria is to suspend the ciliary spasm. As a rule, if taken early enough, the proper correction will afford relief. Sometimes it is necessary to keep the patient under atropin-mydriasis for several weeks. I have prescribed over-correcting glasses for near work with success. Happily, extreme and intractable cases are rare. If such occur, partially correcting prisms, bases out, may be resorted to, and, as a last resort, we have advancement of the external recti or tenotomy of the internal recti.

Hyperphoria is usually relieved by the proper glasses, and the general treatment prescribed in the cases of exophoria and esophoria. In the very rare refractory cases it may be treated by correcting prisms, base up or base down, ground in the ametropic correction, or by tenotomy. However, it is

not uncommon to find that hyperphoria increases when it is corrected by prisms. Tenotomies are often unsuccessful, as the hyperphoria may return after a few months. In fact, most cases are better without prisms or operation.

SUMMER COMPLAINT.

BY J. MADISON TAYLOR, A.B., M.D.,

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THE terrors of summer diarrheas, with their fatal effects, annually confront both physicians and mothers, who are then eager to learn of whatever new thing holds out hope for the limitation of the ravages thus wrought. The causes are pretty well known and have to do almost entirely with the ingestion of faulty foods, especially cow's milk, and affecting the susceptible organism of a feeble child, of temporarily lowered resistance. Hence the lines of treatment are essentially preventive and the disorders almost altogether preventible, and we may look forward to a time when they will cease to prevail.

The milk of the mother is sterile when taken directly into the infant's mouth from the nipple, and is only rarely unsuitable in other respects. While acute gastro-intestinal disorders occasionally do arise during, and possibly due to, the use of breast milk which contains toxins, it need not enter into our discussion here. Infants fed on the breast for even a limited portion of their lives are distinctly better fortified, than those who have not enjoyed this advantage, to resist the effects of improper artificial feeding.

The continued use of certain foods predisposes the infant to attacks of summer complaint, and weakens its capacity to regain tone. In the case of an infant fed on condensed milk, even though it had thriven well, it is said by those of large experience that, if diarrheal disease be once established, a fatal result may be uniformly expected.

A most important predisposing cause of susceptibility is the very obvious one, too often overlooked, of gastric irritability set up by the injudicious manner of administering foods—in irregularities as to intervals and amounts. Whenever the minimum temperature in the day reaches and remains at 60°F. or above, we may expect the prevalence of gastro-intestinal disorders. These will occur most commonly among the poor, because they give less attention to the care of foods, in preservation and preparation; also among them practically immune, healthy, breast-fed infants are allowed freer access to accidental infection acquired by dirty surfaces on which the baby lies or crawls, whence frequently dangerous toxic agents are conveyed to the mouth.

However, we assume that all these facts are known, and will proceed to offer a few simple hints as to cure. First, the babe must be given no milk whatever for at least two days. Next, the intestines must be cleansed of

food remains and other toxic agents and culture media. The temperature conditions must be corrected promptly, when high, by baths, etc., or, when low, by external heat. In the accomplishment of all this medicines play a very limited part, the most important one being brandy. Finally, there remains the gradual upbuilding of the impaired nervous system, blood and circulation, gastric and intestinal mucosa and many cellular perturbations demanding nutrient restoration.

There are two varieties of summer complaint due to the same causes: The acute form resembling Asiatic cholera, swift and overwhelming, accompanied by constantly recurring vomiting and purging to the point of collapse often; at one time the temperature may be quite high and soon after subnormal; the whole attack runs its course in a few hours, or a few days at most. The second form is slower in its beginning, more insidious, more fatally undermining to the vitality; catarrhal symptoms grow more marked; the digestive juices lose their power, emaciation progresses; circulatory vigor wanes, and with it the blood deteriorates; the nervous forces ebb away, and too often, before the gravity of the situation is appreciated, the infant has sunk too low to be restored.

It is well at the outset to wash out the stomach and bowels, although if the vomiting has been extreme the stomach washing may be omitted. However, to apply to the stomach bismuth through the tube is often most quieting to an afflicted organ retching violently. Remember, too, that bismuth is of value in proportion as it is a finely comminuted powder, and that it makes less difference as to its other properties. A teaspoonful may be mixed in a pint of sterile water and run in and syphoned out.

The bowel should be similarly treated, but first irrigated by a sterile decinormal salt solution. If the irritability continues after irrigation, use bismuth, or even tannic acid, or a very weak solution of nitrate or albuminate of silver. These last had better be followed by a thorough irrigation by the salt solution. Much of the water is thus absorbed to restore the tremendous waste of fluids already suffered. Minute doses of calomel are now useful, $\frac{1}{40}$ to $\frac{1}{10}$ grain every half-hour, dry on the tongue.

In conditions of collapse and continued retching a hypodermic of strychnia (gr. $\frac{1}{100}$ - $\frac{1}{50}$) may be needed and repeated as required. This may be combined to advantage occasionally with morph. gr. $\frac{1}{100}$, atrop. gr. $\frac{1}{800}$ once or twice. When the stomach can accept it, give brandy; old, sound brandy is most precious here, as evidenced by the eagerness with which the child welcomes the spoon in which it comes.

The infant is better for taking no food at all for six, twelve, or even twenty-four hours; sterile water and stimulants sufficing. Most cases will need external heat at some time, unless the weather is intensely hot. When the skin surface is hot, let this be exposed to drafts of air. By and by, as the stomach quiets and the bowels are freed of their fermenting contents, small amounts of food are admissible. Albumin water is most safe at

hour intervals, along with brandy or without. On the second day, this may be supplemented by fresh expressed beef juice; on the third day a carefully strained broth. Then keep to animal foods of the simplest sort, free of solid or solid-forming materials for many days. Before returning to milk, it is well to use cream and barley water. After the condition of the intestines has become satisfactory, a gradual return to modified milk may be tried once a day, supplemented by the other foods; then twice a day, and finally altogether. The proteids should be kept low till the stools warrant their restoration.

Much more might be said on the subject; but in outline these principles have served well in many difficult cases.

Surgical Hints. In the class of fractures in which there is detachment of processes and apophyses, we very often fail to get crepitus, as in transverse fractures of the patella, fractures of the olecranon and coronoid processes of the ulna, and of the coracoid and acromion processes of the scapula.

The severity of the symptoms of intestinal obstruction usually bears a relation to the suddenness of the attack. The more sudden it is, the worse for the patient, and the greater the need of immediate interference.

A truss for inguinal hernia is of no value unless the pad lies over the internal ring in a permanent position, notwithstanding the changes in posture of the body, and unless the pressure is just enough to hold the hernia, and no more or less.

In all intraperitoneal operations the rule is to move the bowels early, but if there is shock with a fast and irregular pulse and nervous disturbance, morphine is indicated at first, just enough to quiet the nervous system. After this has been accomplished the bowels may safely be moved.

It is a mistake to think that cancer of the uterus is always painful. If a suspicious growth is seen, the question of pain should not influence the diagnosis. Any flow of blood after the menopause demands immediate careful investigation, but cancer of the cervix has been observed in quite young women.

When you succeed in passing a catheter into the bladder in cases of considerable retention, do not empty it entirely or too suddenly, as it may give rise to hemorrhage, which is sometimes very profuse, or to severe cystitis, or even to urinary suppression and death. It is well to partially plug the lumen of the catheter so as to allow the urine only to dribble out.

If a child complains of pain anywhere about the lower extremities, or limps in the slightest degree, examine the hip-joints as a matter of routine. In that way many unsuspected cases will be early revealed.

In an inflamed cervix uteri the tenaculum holds quite firmly, in carcinomatous ulceration it tears out readily, with much bleeding, and in cystic degeneration, while it usually tears out readily, it lets out thin mucus with or without blood.

In old people quite a considerable degree of cystitis may exist without giving rise to symptoms. The microscopical examination is in such cases quite indispensable.—*Internat. Jour. of Surgery.*

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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The Elimination of Phosphorous and Nitrogen in Leukemia.

Hale White and Gowland Hopkins (*Jour. of Physiol.*, XXIV., 1, p. 42). The authors examined the urine of a patient with chronic leukemia, and arrived at the same conclusion as many predecessors, viz., that the elimination of phosphoric acid bears no direct relation to the increase of leucocytes. As far as the real cause of the hyperleucocytosis is concerned, it is believed to be due rather to a diminished destruction than an abnormal increase of the white cells. Consonant with many recent investigators, the authors found the uric acid in their case not to be increased.

Experimental Investigation of the Therapy of Vascular Disturbances in Infectious Diseases. Passler (*Deutsch. Arch f. klin. Med.*, Bd. LXIV.) employed numerous drugs in the collapse of acute infections. He inoculated animals and then studied the blood pressure under the influence of various medicaments. He believes the vasomotor paralysis to be the most potent factor in the production of collapse, and not cardiac weakness. Cardiac stimulants yielded little, if any, results. Digitalis may temporarily support the heart in its conflict against vasomotor palsy. Ether was valueless; alcohol also, even when given intravenously. Ergotin and strychnin were of any influence only in toxic doses. Only those remedies were of avail which were capable of exciting the vasomotor center, as caffeine. This is superior to the time-honored camphor, owing to its more ready absorption. Normal salt solution, intravenously or by hypodermoclysis, may prove of favorable import, owing to the better filling of the heart.

The Appearance of the Typhoid Bacillus in the Urine. Schichhold (*Deutsch. Archiv. f. klin. Med.*) examined the urine of a number of typhoid patients, and, in contradistinction to other investigators, who found typhoid bacilli in the urine when the kidneys were healthy, "recovered the organism only in those cases in which evidence of renal disease existed." They appeared shortly after the onset of the kidney trouble, and lasted well into the convalescence. They appeared to be highly virulent, so that the disease may be transmitted through the urine. In such cases of "nephro-typhoid," the danger of infection, for the attendant, should not be underrated.

Recent Investigations upon Malaria. Thayer (*Med. News*, May 20, 1899, p. 617) briefly reviews the work that has been done in this line. As to the mode of infection, three chief views have been held, viz., (1) gastro-intestinal, (2) by inhalation, (3) by the bite of insects. Though we are handicapped by our lack of knowledge of the form and habitat of the malarial parasite when outside the human body, there seems little, if any, evidence to support either of the first two mentioned methods of conveyance. It has long been known, however, that the disease could be transmitted by inoculating any one with the blood of an infected individual. Years ago Laveran suggested the mosquito as a possible intermediate host, and, more recently, Manson, he who showed it to be true also in the case of the *filaria sanguinis hominis*. To Surgeon-Major Ross, however, is largely due the credit for our present position in the matter. He carefully studied mosquitoes in infected regions, and found in the stomach wall of those that had previously bitten infected persons, large pigmented bodies. The pigment resembled so closely that previously observed in the malarial parasite, that Ross advanced the view that these structures represented some extra corporeal stage in the life history of the malarial organism. He was unable at that time to prosecute his studies further, as the malarial season was over, but he studied the parasites of birds, which are similar to those of malaria. He found that if the gray mosquito (*Culex pipiens*) be fed upon birds infected with proteosoma, there appear two days later in the wall of the intestines similar pigmented bodies to those described. These bodies are encapsulated. They increase in size up to the seventh day, and, on reaching maturity, protrude into the body cavity of the mosquito. Rupture soon occurs, with the escape of a large number of small, spindle-shaped, trypanosome-like bodies into the circulation of the insect. Ross further pointed out that many of these bodies accumulate within the cells of the veneno-salivary gland, the outlets of which unite in a common duct running to the tip of the mosquito's proboscis. Naturally this suggested a possible means of infection, and Ross found that mosquitoes fed upon infected birds were able to inoculate other non-infected birds. Grassi, Big-nami and Bastianelli have since succeeded in substantiating the above fact in the case of the human being. Three mosquitoes were allowed to suck the blood of an individual suffering from the estivo-autumnal type of malaria. They were then allowed to bite a non-infected person, who subsequently developed estivo-autumnal malaria. The three mosquitoes were then killed,

and in their stomach walls were found the large granular bodies, while spindle-shaped "sporozoids" were found in the salivary glands. Whether other modes of infection exist is not definitely known; but since all the encapsulated bodies found in the stomach wall of the mosquito do not give rise to "sporozoids," it is thought to be possible that some of them are resistant, spore forms as it were, of the parasite, and that they may possibly enter the mosquito larva.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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On the Diagnosis between Supraphrenic and Subphrenic Pyo-pneumothorax. Sidney Short (*Birmingham Med. Rev.*, Apr., 1899) tabulates the principal points of distinction between the two conditions mentioned. He calls attention to the value of the history of the case, particularly in the manner of its onset and previous history of the patient. In the supraphrenic variety, the commonest cause is the rupture of a portion of the pleura covering a diseased lung. The subphrenic variety is commonly due to perforation of gastric ulcer, or secondary to hepatic abscess. There is, therefore, usually a history of dyspepsia, and possibly of hematemesis. This may be, however, entirely absent. Such an abscess may arise from the perforation of a duodenal ulcer, trouble in the gall-bladder, cancer of the stomach, abscess of the liver, hydatid disease, appendicitis, or a peri-nephritic abscess. If the onset is sudden, the diagnosis may be taken to lie between pneumothorax from early phthisis and a perforating gastric ulcer or hepatic abscess. In the first, there is an acute pain, with coughing, on the affected side. In a perforating gastric ulcer, pain is felt in the epigastrium, accompanied by acute tenderness. Vomiting may be present in both conditions, but is more common in pneumothorax. Dyspnea and faintness are present in either case. The most important point in the physical examination is to determine the position of the diaphragm. The signs of displacement of the surrounding organs are important points in determining this condition. The movement of the diaphragm is also of great value. Troubles in the thorax usually depress it, so that it fails to act; disease below the diaphragm raises it, but allows it to continue its

motion, which can be recognized by its effect upon the abdominal walls and the abdominal viscera. He reports a case in which there was an elastic tumor in the left hypochondriac region during an early period of the case. There was an area of full resonance between this area and the heart, which was pushed upward. The physical signs pointed to the presence of fluid below the diaphragm, occupying the position that would be taken by fluid in the lesser peritoneal cavity. The presence of a percussion splash indicated that there was air in the abscess cavity. There was some evidence of pleural effusion. Death occurred from acute pleuro-pneumonia. At the autopsy, there was an ulcer in the posterior wall of the stomach. In the lesser peritoneal cavity, there had been an abscess, which had healed. The left pleura was adherent all over. The point of interest in the case is the presence of an elastic tumor, which pointed to fluid in the lesser peritoneal cavity, and is one of the signs upon which special stress is laid in the diagnosis of the condition. The second point to which attention is drawn is the presence of clear serum in the left pleural cavity, obtained by tapping. This fact would indicate that the collection of pus was outside that cavity. When pyopneumothorax occurs in the left side, the commonest cause is perforation of a gastric ulcer. Cases of the cure of a gastric ulcer are so common in the hospital and this result is so uniform that there must be some special reason why cases not in the hospital so frequently perforate. The reason is perhaps the pressure of the corset upon the stomach. The most valuable signs of perforation are violent pain over the stomach, coming on quite suddenly, vomiting, which may or may not be severe, shortness of breath, rapid pulse, and general signs of early peritonitis. If operation is not performed at once, the course of the case either presents a general peritonitis or localization of the process by adhesions and the formation of a subphrenic abscess, usually containing air. In this condition, the general state of the patient may improve, but the patient remains weak, and has an irregular temperature, and the pulse is quick. Each sign should suggest a careful examination for the presence of pus.

Schott Treatment of Chronic Heart Disease. Elsworth Smith, of St. Louis (*Jour. Am. Med. Assoc.*, Vol. XXX., 11, No. 41), draws attention to the fact that persons frequently suffer from chronic heart disease for long periods of time without manifesting, to a very marked degree, the symptoms of the condition which may be present. Frequently these people go through life without danger, finally dying in old age of some intercurrent malady, thus showing that the destiny of a valvular heart disease does not depend upon the valvular lesion itself, but upon the condition of the *heart muscle*. So long as the cardiac muscle remains sufficiently strong to carry on the circulation in spite of valvular defects, just so long will the patient be free from any symptoms of disease of this organ. A weakening of the heart muscle will, however, give rise to venous stasis with all its attendant phenomena. Therefore the treatment of chronic heart disease resolves itself into the proper development of the heart muscle. As in conditions of muscles elsewhere, regulated and judicious training enables a better cir-

culatation in the organ, thereby restoring to it an abundance of good, rich blood so much needed for its nutrition. In disease the cycle of systole, diastole and pause becomes altered so that the state of rest represented by diastole and pause is shortened, thereby causing an acceleration which wears out the organ; while, at the same time, insufficient nourishment is furnished through the medium of the coronary arteries. Any drug which stimulates the pneumogastric nerve reduces the number of beats, and for this reason such drugs as digitalis, strophanthus and convallaria do good. When loss of compensation is great, the best treatment is prolonged rest, thus reducing the pulse rate. In some instances, however, another plan of procedure is frequently of advantage in failure of compensation, even when quite marked; and attention is drawn to that method introduced by the brothers August and Theodore Schott, of Nauheim, Germany. By this plan of treatment, baths and a proper amount of exercise are judiciously employed, in order to bring about a better condition of the diseased organ. The Nauheim springs contain sodii chlorid, 2 to 3 %; calcii chlorid, 2 to 3 parts per 1,000, together with various salts of iron and a very great amount of carbonic acid gas. The carbonic acid gas is probably the most potent factor, since it brings about a stimulation of the peripheral circulation, thus causing a vasomotor dilatation of the arterioles. In this way, the surplus blood is drawn away from the heart, with rest to the fatigued organ. From this fact, the symptoms ameliorate, and it has been noticed that the organ has been reduced in size. These baths can be prepared artificially in several strengths:

Bath No. 1: Sodii chlorid, 4 lbs.; calcii chlorid, 6 oz.

Bath No. 2: Sodii chlorid, 5 lbs.; calcii chlorid, 8 oz.

Bath No. 3: Sodii chlorid, 6 lbs.; calcii chlorid, 8 oz.; Sodii bicarb., 6 oz.; HCl, 7 oz.

Bath No. 4: Sodii chlorid, 7 lbs.; calcii chlorid, 10 oz.; sodii bicarb., 8 oz.; HCl, 12 oz.

Bath No. 5: Sodii chlorid, 9 lbs.; calcii chlorid, 11 oz.; sodii bicarb., 1 lb.; HCl, 1 lb.

Bath No. 6: Sodii chlorid, 11 lbs.; calcii chlorid, 12 oz.; sodii bicarb., 1 lb.; HCl, 2 lbs.

To the foregoing different strengths of these ingredients are added 40 gallons of water. The baths are to be given every two days, preferably in the early morning, when the stomach is least apt to be full. The patient remains in the first bath five minutes, the temperature of which should at first be 96° F., and gradually reduced. That of every third bath is from 1° to 3° lower, down to 82° F. After the first bath, the patient may be allowed to remain a little longer each time, until finally he may remain 20 or 30 minutes. A cup of hot milk or bouillon should be given before and after the bath. The patient should, of course, be constantly watched while in the bath. After the bath he should be put to bed for an hour or two. On alternate days resistant movements should be employed. The movements involve the different groups of muscles, as of arms, legs, trunks, hands, feet, etc. At first only a limited number of movements are employed, and later they may be regulated according to strength of the patient.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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The Determination of the Size, Shape and Position of the Stomach by means of the X-Rays. Rosenfeld (*Centralblatt für innere Medizin*, 1899, *Vratch*, Vol. XX., No. 15) employs the following method: Into the stomach is introduced a soft sound, 11 mm. in diameter and 120 cm. long, closed at one end and filled with small shot, so that the entire weight of the tube does not exceed 150 gms. 10 cm. of the lower blind end is perforated by means of a red hot needle with small holes directed at an angle which would admit air, but not allow the shot to pass through. The sound is introduced until it reaches the most dependent portion of the stomach. Then its location is found by the X-Rays, and its shape modeled on a lead rod, which is held in front of the sound, so that the shades of both the rod and the sound correspond. The rod is then used for drawing a line on the skin corresponding to the position of the sound. The stomach is filled with air by means of a rubber bulb attached to the outer end of the sound and observed by means of the X-Rays. It will appear as a bag distended with air, and its outlines can be made out distinctly, and drawn on transparent paper.

The Contents of the Stomach in the Gastric Crises of Locomotor Ataxia. Douglas (*The Lancet*, Apr. 15, 1899) puts on record another instructive case of gastric crises in tabes, tending to show that, contrary to the findings of Sahli, Rosenthal, Hoffmann and others, HCl may be entirely wanting during the attacks. The attacks to which the patient was subject occurred at frequent intervals, and were characterized by nausea, uneasiness in epigastrium, vomiting, first of food and then mucus mixed with blood and bile. On several occasions the amount of blood was about a pint. He also suffered from severe ptyalism, rejecting at times from 1 to 1½ pints of saliva, which was found to act very vigorously on starch. The stomach was frequently examined by the aid of the tube, and careful analyses of the contents made. It was observed that during the intervals between the attacks digestion was normal, free HCl being present only in very small amounts. During the attacks, free HCl was generally absent, and traces of lactic acid were present on three occasions, while peptones were, as a rule, present on all occasions, except one, when blood formed a large part of the vomited matter. The conclusions drawn from this case are: (1) That during the crises the stomach secreted a large quantity of digestive fluid, inferior in but slight degree to that secreted during health;

(2) that there was no indication that this secretion was associated either with hyperacidity or hyperchlorhydria, and (3) that, apart from the presence of blood, there was nothing in the fluid indicative of a true lesion of the stomach.

The Chemical Properties of Pepsinogen. Borisow (*Bol-nitshnaja Gaz. Botkina*, Vol. X., No. 14) determined, by a number of simple but conclusive experiments, the albuminoid nature of the pepsin-forming substance. He shows that the gastric juice contains only pepsinogen which, under favorable circumstances, becomes pepsin, the latter either combining with the albumin present or becoming destroyed. This mother-substance, or, as the author proposes to call it, propepsin, is albuminous, as is seen from the reaction which the concentrated gastric juice gives with concentrated nitric acid and other tests for albumin. The reactions obtained with an acid solution of propepsin are quite distinct from those given by a solution obtained by dialysis. In the former, (1) boiling throws down a heavy precipitate of albumin; (2) alcohol (95%) has the same effect, and (3) saturation with neutral salts produces a sediment of pepsinogen. If the solution, however, is not acid, the above reactions are not obtained: (1) The dialyzed solution remains clear on boiling; (2) is not precipitated by alcohol, and (3) saturated salt solution produces only a slight sediment. But, as soon as acid is added to this solution, the reactions characteristic of the acid solution of pepsinogen can be again obtained. This would seem to prove that pepsinogen combines with HCl, forming a new substance distinct from the original one. Again, the dialyzed solution was found free from Cl, showing that in the acid solution there occurs a combination of pepsinogen with HCl, this new substance being capable of decomposition by dialysis. The following experiment still further establishes this fact. If to a dialyzed solution of pepsinogen is added drop by drop a weak solution of HCl (0.2%), a sediment occurs, but if the addition of HCl be continued the sediment will finally be dissolved. From this it follows that the combination of pepsinogen with HCl found in the stomach is destroyed by dialysis, is insoluble in plain, but soluble in acidulated water. It was further shown that this combination of pepsinogen with HCl is a very unstable one, and the higher the acidity the more unstable it becomes and, *pari passu*, the more rapid is the formation of pepsin with the consequent digestion of albumin.

On the Influence of Nutrient Enemas on the Secretion of Gastric Juice. Ziarko (*Przeglad Ckaski*, No. 9, 1899; *Boln. Gaz. Bot.*, Vol. X., No. 14) determined that nutrient enemas, instead of increasing the secretion of gastric juice, as is supposed by Winternitz, actually diminish the acidity. This view removes the contraindication to the use of nutrient enemas in gastric ulcers pointed out by Winternitz. [It is probable that enemas may produce different effects upon the gastric secretion—sometimes stimulating it and under other conditions depressing it. In a series of clinical cases recently, I have found that enemas containing a weak solution of carbolic acid and listerine, given with a view to overcoming nervous symptoms depending upon autointoxication, markedly increased the secretion of HCl.—B. R.]

NEUROLOGY.

UNDER THE CHARGE OF

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Beitrag zur Lehre der acuten Poliomyelitis (Contribution to the Study of Acute Poliomyelitis). Bülow-Hansen and Harbitz (*Ziegler's Beiträge*, XXV., 3) report three cases of anterior poliomyelitis in childhood, two of which were with necropsy. These findings are important, and confirm the few studies already made in cases in which death has permitted an early examination of the nervous tissues. The findings were very similar in the two cases reported by Bülow-Hansen and Harbitz. The pia of the brain and cord was much congested, and the cord substance was very hyperemic. The arteries of the anterior fissure were especially affected. Exudation and round cell infiltration were found about the spinal vessels, and the round cells about some of the vessels were exceedingly numerous. The inflammatory process extended over the gray matter of the entire cord, but was most marked in the cervical region. It was most intense in the anterior and lateral horns; but in the cervical region the posterior horns and a portion of the white matter were involved. The medulla oblongata was also affected. The ganglion cells of the cord were destroyed, or much diseased, and the degeneration of these cells was most marked where the round cell infiltration and exudation were most intense. The examinations made in acute cases of anterior poliomyelitis show that the disease is a truly inflammatory one, and is probably the result of infection; the blood vessels being especially affected.

A Case of Brain Tumor at the Base of the Left Second Frontal Convolution. Gordinier (*Amer. J. Med. Soc., Phila.*, May, 1899, Vol. CXVII., No. 5,) has made an important contribution to cerebral localization in reporting a case of brain tumor situated in the left second frontal convolution, the sole localizing symptom of which was agraphia. The patient was a right-handed woman, and presented the general symptoms of cerebral neoplasm and the special symptom of total inability to write, without any other form of aphasia. Death followed an exploratory operation, and at the autopsy a glioma was found involving the left second frontal convolution. The arm area was distinctly separated from the lesion. The author thinks that this case proves the existence of a cortical center for writing that holds the same relation to writing movements that the speech center has to speech movements. It is located in the foot of the left second frontal convolution in right-handed persons and, possibly, similarly on the right side in the left-handed. Its destruction is followed by pure motor agraphia, *i. e.*, agraphia without other forms of aphasia. In reviewing the literature,

Gordinier has not found any case of pure agraphia; in most of the reported cases motor-vocal aphasia was present. Autopsies in such cases have shown that the lesion involved both the second and third frontal convolutions of the left hemisphere.

A Contribution to the Study of Aphasia. Collier (*Lancet*, *Lond.*, Mar. 25, 1899, p. 824) reports a case in which complete destruction of Broca's convolution by a neoplasm, in a right-handed person, produced no aphasia. The patient was subject to convulsive attacks, and was dull mentally. She had complete paralysis of the right sixth nerve, paresis of the left sixth and seventh nerves, but no involvement of any limb. She was not word-blind, agraphic, or aphasic, although occasionally she misused words. At the necropsy a tumor was found involving the inferior margin of the left second frontal convolution in its middle portion; the whole of the posterior portion of the left third frontal convolution; the posterior part of the orbital lobe and, to a small extent, the anterior gyrus of the island of Reil and the anterior portion of the first left temporal convolution. The right hemisphere was perfectly healthy. According to Collier, the case seems to prove the possibility of the fortuitous major activity of the glosso-kinesthetic center in the right third frontal convolution in a right-handed person. There was no instance of left-handedness in the family. The theory of defect in the left third frontal convolution causing predisposition to neoplasm in it and the development of a glosso-kinesthetic center in the right third frontal convolution, is unsupported by either the symptoms or the pathologic findings. The most plausible explanation is that in this patient there was an unusual location of the active glosso-kinesthetic center with the coincident presence of a neoplasm in the usual motor speech center.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Acetosoluble Albumin in the Urine. Coffin (*Phila. Med. Jour.*, Apr. 29, 1899) reviews the literature of this subject, showing that there may often be found, especially in pregnant women, a form of albumin which is precipitated by boiling, but undergoes solution again upon the addition of acetic acid or even of nitric acid, in some cases; and that if rendered ever so faintly acid by acetic acid beforehand, it will not be thrown down

at all upon boiling. The nitric overlying test and nitric-magnesian test may be negative. The writer reports several cases in illustration and concludes that the boiling and acetic-acid and nitric-acid test are not to be depended upon in all cases, adding: "In this form of albuminuria, and it may be in any form of albuminuria, we have occasionally, or, it may be constantly present, in the urine a form of albumin soluble in acetic acid. This form of albumin is precipitated by Tanret's reagent, by Esbach's reagent, trichloroacetic acid, and by potassium ferrocyanid. Our growing knowledge of the albumins present in the urine tends more and more to show the unreliability of any single test as a constant index to the presence or absence of albumin."

An Exceptional Case of Hematuria. Frank (*Medicine*, 1899) reports a case of the above in a married woman, 42 years old, who had excellent health until 6 months before he saw her. Her only complaint was bloody urine, which was not checked by the ordinary treatment. On examination, he found uterus and appendages, as well as the kidneys, normal. Yet the urine contained blood, and there seemed to be more blood than urine passed. Bleeding from kidney and a catarrhal condition were excluded. There being no pain, stone in the kidney was also excluded. His treatment consisted of rest in bed with internal medicine, and irrigating the bladder. No relief was obtained by the above. Diagnosis of ulceration of bladder and erosion of the vessels was made. Examination with the cystoscope and with the straight glass endoscope revealed that the mucous membrane of the bladder was covered with numberless uric acid crystals, whose sharp points and corners had penetrated into the bladder wall. The mucous membrane between the crystals was red and congested, but not as much as would be expected. It was decided to use a Bigelow's evacuator, and, with each suction of the bulb, large quantities of uric acid crystals appeared. The patient entirely recovered under this treatment.

Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy. Edebohls (*Med. News*, Apr. 22, 1899) states that out of 6 cases of movable kidney with chronic nephritis operated on, 4 were cured by this procedure. He thinks that there is no doubt that the kidney symptoms were produced by the movability of the kidney, as an examination of the urine, repeatedly, showed no signs after 1, 2, 4 months and 1 year respectively, and as none of the patients received any treatment after the operation. In one of the 6 cases the nephritic symptoms reappeared after the kidney was redetached. One of the most important facts learned was that chronic nephritis is probably unilateral much oftener than is supposed. In 2 of the 4 cases all the symptoms of chronic nephritis disappeared after fixation of the movable right kidney. The left in these cases must have been sound, or the urine would not have given negative results. In the other 2 cases bilateral nephropexy was performed, and the nephritis was found unilateral, affecting the right kidney in one and the left in the other. From this fact it follows that the diagnosis is more encouraging for one suffering from chronic nephritis. It seems to the author that if

displacement of the kidney gives rise to the congestion, why may not the latter condition occasionally progress to inflammation? E. Ross corroborates Edebohls' statement, and has operated on 14 cases of this kind which, after operation, were free from albumin and casts.

DERMATOLOGY.

UNDER THE CHARGE OF

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A New Agent for the Treatment of Alopecia Areata. MacGowan (*Jour. Cut. and Gen.-Urin. Dis.*, May, 1899) claims to have found in trikresol a remedy of superior value in the treatment of alopecia areata. Eight cases treated by this application were cured within a period averaging $2\frac{1}{2}$ months. The first application is preceded by thorough cleansing of the patch with benzine. The remedy is applied pure to the scalp and in 50% solution with alcohol to the face. The patch and surrounding zone are thoroughly frictioned with a swab of cotton, saturated with the trikresol. The application causes a burning pain, which disappears usually in the course of a few minutes. The area treated becomes thoroughly blanched, the whitish discoloration being followed in a few hours by hyperemia. The applications are repeated in from 4 to 10 days.

Lupus Erythematosus in a Tuberculous Subject—Autopsy Report. Fordyce (*Jour. Cut. and Gen.-Urin. Dis.*, Mar., 1899) reports the case of a 39-year-old woman, affected with lupus erythematosus, who was admitted to the City Hospital of New York during the spring of 1898. She had been addicted to the excessive use of alcohol for years, was inordinately fat, had only menstruated thrice in her life, and was a confirmed epileptic. She was brought into the hospital in a state of delirium which developed into coma, soon terminating in death. The patient presented a typical butterfly-shaped patch of lupus erythematosus upon the nose and cheeks, which was of three years' standing. The blood vessels over this area were markedly dilated. Upon autopsy, were found pulmonary and cerebral edema, tubercular abscesses of the kidneys and hypertrophic hepatic cirrhosis. The author remarks: "The frequent association of lupus erythematosus with tuberculous foci in the lymph nodes and internal organs, as well as the close clinical resemblance of certain forms in this disease with lupus vulgaris, have convinced many excellent clinicians that something more than a mere

coïncidence connects the two processes. In this case, however, there were so many pathological factors that it is difficult to ascribe to any of them an etiological significance."

Injections of the Artificial Serum of Hayem in Malignant Syphilis.

Augagneur (*Ann. de Dermat. et de Syph.*, May, 1899) writes as follows: "All specialists are acquainted with cases of malignant syphilis, although they are rare, which resist the most active specific treatment. The two following cases, in which subcutaneous injections of artificial serum (lavage of the blood) transformed the patients, one of whom was in a desperate state, are sufficiently conclusive to formally indicate this measure in analogous cases." The first case was a malignant precocious syphilis occurring in an 18-year-old lad, who had, from the third month after infection, suffered from deep ulcerations, and whose general condition was grave. On February 15th the patient had an extensive papular eruption, the lesions running together in plaques. The patient was weak, pale, emaciated, with anorexia, diarrhea and occasionally vomiting. He was given daily inunctions of 6 grms. of Neapolitan (mercurial) ointment, 2 grms. of iodid of potash, and tonics. On February 28th the local and general condition was worse, many of the papules undergoing ulceration. Suppuration was abundant, and new lesions were appearing every day. The evening temperature was 38.6° to 38.9° C. The patient was in a profound asthenia. On March 2d, in addition to the previous treatment, the patient was given an injection, into the cellular tissue of the right thigh, of 150 grms. of the following fluid:

Sodium chlorid,	7 grms.;
Crystallized disodic phosphate,	2 " ;
Water,	1,000 " ;

The same evening there was rise of temperature to 38.7°, dropping to normal in the course of a few days. There was also marked polyuria. A second injection was given on March 10th, and a third on March 16th, after which a marked improvement in the general health occurred. The fever and pain disappeared, the appetite returned and the skin lesions began to cicatrize. Four more injections were given at intervals of 6 to 14 days, and the patient made an excellent recovery. The patient was seen a year later and had had no relapses. The second patient was a syphilitic of 5 years' standing, who, although continuously treated with mercury and iodids, had had frequent relapses. At the time of admission to the hospital, he was suffering from a papulo-tubercular eruption of the face and ecchymatous lesions of the body, for which he had used alternately iodids and inunctions of mercury. Weekly injections of calomel were inaugurated, but seemed to aggravate the condition. The patient had no appetite, was bedridden and suffered with diarrhea. Three days after the first injection of artificial serum, there were favorable modifications of the local and general condition. The patient immediately felt much better. After the second injection, he was able to resume the use of potassium iodid. The patient left the hospital 26 days after the first injection, completely recovered. The

writer claims that the favorable action of the injections cannot be contested. How they act, he is not prepared to state; perhaps by increasing renal activity and the elimination of the toxins, or by stimulating leucocytosis and so fortifying the organism. He advises the injections in quantities of 400 to 500 grms. every 5 or 6 days. The greater the febrile reaction and the more profuse the polyuria, the more energetic the effect. It is only necessary to give 4 or 5 injections at any one period.

THERAPEUTICS.

UNDER THE CHARGE OF

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On the Absorption of Iron. Austin (*Boston Med. and Surg. Jour.*, Vol. CXL., No. 9), with the help of Coriat and Thorpe, experimented upon three dogs, a beagle, bull and setter; they fasted them for 3 days and then fed them 300 grms. of meat, to each of which was added iron in the form of sulphate, or albuminate, or hematin, each having the same amount of iron, *i.e.*, of the 1st, .972 grms.; of the 2d, 5.86 grms.; of the 3d, 11.42 grms.; and during the time they were under observation, a careful chemical examination was made of the feces, and of the fresh meat before it was given to the dogs. The method required skill for its manipulation and was rather lengthy. His conclusions were as follows: (1) That iron is constantly being eliminated both in urine and feces even during fasting. (2) That apparently raw meat furnishes an available form of iron for absorption under normal conditions. (3) That inorganic iron as represented by ferrous sulphate is non-absorbable. (4) That albuminates and peptonates of iron are absorbable but to a limited extent. (5) That organic iron, of which hematin and hemoglobin are representatives, furnishes the most easily absorbable and most valuable of all iron preparations.

Tetanus Antitoxin, Clinical and Experimental. Tavel (*Correspondenz-Blatt für Schweizer Aerzte*, Vol. XXIX., Nos. 7 and 8) has made a study of antitoxin in tetanus, and has used it with good results, both in cases of men and horses; he has found some difficulty in getting animals to develop a serum of high grade, which should be at least 1:2,000,000. Most animals, however, develop a lower grade, which is only of use in immunization. He reports 4 cases of horses; 2 died and 2 recovered. Ten human cases as follows: (1) Woman, ran a splinter in middle finger April 10, 1897. May 3d, tetanus; 4th, 5th, 6th, and 7th, chloral treatment;

8th, 9th, 10th, 10 injections of serum (1:20,000,000); recovery. (2) Man, 41 years, injured knee on September 20, 1897. October 3d, tetanus; October 5th, 4 injections of serum; 6th, 2; 7th, 2; 10th, 2; 12th, 4; 13th, 2; recovered slowly. March, 1898, he had resumed work. (3) Man, 55 years, wound of middle of finger with crowbar, April, 1898. May 24th, developed symptoms; May 28th to 31st, 10 injections of serum (1:1,000,000,000); from 2d to 9th of June, 14. Improved slowly. (4) Child, 10 years, May 14, 1898, fell from a ladder; March 24th, developed tetanus. From 27th to 6th of June received a daily dose of serum; by 29th was cured, except some facial paralysis. (5) Man, 37 years, wound of finger by a nail on September 5, 1898; on 7th, tetanus; 10 P.M., injection of 50 c.c. serum (1:2,000,000,000); 11 P.M., cramps were better and he continued to improve without interruption. (6) Case died. (7) Died. (8) Struck on the head December 8, 1898, with a whip; by 13th tetanus had developed; 50 c.c. serum given subcutaneously, followed by 50 c.c. intravenous. December 14th, 50 c.c. intravenous; died. *Post-mortem* showed septic thrombi. Ninth and tenth cases also recovered. In reviewing his cases, the author believes that the first case would probably have recovered without antitoxin, and he has mentioned in the latter part of his article that the diagnosis of some of his cases seems to be questionable. The cases that were treated by the intracranial method did not yield the expected result, although Profs. Kocher and Girard intend to publish their cases later.

Stypticin (Cotarnine Hydrochlorate) in Uterine Hemorrhage.

Boldt (*Med. News*, Vol. XXIV., No. 14) has investigated the use in different forms of bleeding and has classified the results under the following divisions: (1) Prolonged and profuse menstruation in unmarried anemic subjects without any discernible change in the pelvic organs—9 cases; $\frac{3}{4}$ to $2\frac{1}{2}$ grs. every 2 hours were given in most cases; 2 were only slightly benefited. Flow was usually decreased, but dysmenorrhea (in those who suffered) continued. (2) Fibromyomata, causing menor- and metrorrhagia—4 cases; 3 no result, 1 slightly improved. (3) Hemorrhage due to cancer—5 cases; negative result. (4) Para- and perimetritis after abortion—3 cases; improvement in all. (5) Para- and perimetritis after full term delivery—2 cases, both improved. (6) Profuse and prolonged menstruation in multiparae without anemia and without changed endometrium, but moderate enlargement of the ovaries—8 cases; 1 no effect, 2 lost, others benefited. (7) Irregular bleeding after the puerperium without retention of decidua or placenta, these having previously been removed with the curette—12 cases; marked effect in all. (8) Irregular bleeding after the puerperium with retention of small areas of placental tissue—2 cases; little or no result. (9) Hemorrhagic endometritis—8 cases; no effect until after curettage. (10) Fungous endometritis—2 cases; no result. (11) Retroflexion with chronic endometritis—2 cases; only slightly benefited, while routine treatment gave prompt relief. (12) Chronic metritis and endometritis—7 cases; 1 result marked, 6 slight. (13) Irregular bleeding in multiparae at the menopause—5 cases; good results. (14) Irregu-

lar bleedings without any discoverable cause—1 case; good result (hydrastis had no effect). (15) Subinvolution present 6 weeks to 4 months after delivery—11 cases; 1 no appreciable effect, others markedly benefited. (16) Perimetritis a parametritis due to traumatism—3 cases; good results. (17) Bleeding during pregnancy—3 cases. Its action in this class was doubtful. In 1 case of placenta previa, a hypodermic injection gave immediate relief; while in 2 others, of pregnancy, about the 3d and 4th months, bleeding was controlled without producing pain or abortion. Therefore as to its oxytocic properties there is some doubt. The author believes that in some forms of uterine hemorrhage it is almost a specific, and has administered as high as $4\frac{1}{2}$ grs. to a dose without unpleasant effects. The drug is a derivative of narcotin, one of the alkaloids of opium, and has a yellow color, intensely bitter, soluble in water, and becomes darker when exposed to light.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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On the Question of the Influence of the Public School on the Physical Development of the Pupils. Vashnow (*Vratch*, Vol. XX., Nos. 4 and 5) has made some interesting observations on the pupils of 10 public schools during a period of 3 years, with a view of determining what effect the school has on their physical development. He arrives at the following conclusions: The physical development of the children under observation was quite satisfactory. The yearly increase in height and chest measurements was normal, and no retarding influence of the school on this increase was observed. In making such observations, it is absolutely necessary to observe the same pupils during the successive years.

House Air Consumption. Swayze (*Med. Times*, May, 1899) very properly calls attention to the fact that the primary predisposing cause of consumption is the air of living apartments, offices, factories, etc., which is saturated with poisonous gases as a result of the desire of the people to exclude dust and cold. This air is irritating to the lungs, impoverishes the blood, and thus not only impedes the recovery from any lung disease, but develops a favorable nidus for the development of tubercle.

Is Tuberculosis Infectious? Buschnew (*Vratch*, Vol. XX., No. 14) devotes a very extensive paper to the discussion of this important subject. He calls attention to the morbid fear of contagion spreading among the people, and holds that it is largely under the influence of physicians. This consumption-scare exerts a demoralizing influence on the victims as well as on those who come in contact with them; it brands the consumptive as an outcast, and mercilessly severs all blood-relations or ties of marriage and friendship. The author therefore questions the correctness of the prevalent belief in the contagiousness of tuberculosis, and cites numerous observations of such authorities as Revilliod, Riffel, Mitrophanow, Varguniw, Middendorp, Hueppe, Aufrecht, Williams and others tending to disprove not only the contagious nature of tuberculosis but the direct causative relation to the latter of the bacillus of Koch. He endeavors to prove, by statistics and otherwise, that in hospitals and sanitariums, where the help comes in intimate contact with consumptives, cases of infection are extremely rare. Thus, during his service in hospitals for the last 12 years, he observed only 1 case of infection, the patient, a servant at the autopsy room, being of very untidy habits and an alcoholic. Similarly, cases of direct infection among physicians are extremely rare, as is attested by the fact that many throat specialists, who come in such close contact with patients suffering from tuberculous laryngitis, live to a good old age. The commission for the investigation of diseases in England sent out the question, "Is tuberculosis contagious?" to the physicians; and of the 1,000 answers, only 261 were affirmative; 673 absolutely denied the contagiousness of consumption. A similar question was proposed by the Hospital Society of Paris to 10,000 physicians, and 83 answered, giving 439 observations, 213 of which indicated the contagious nature of this disease. Of 124 physicians who answered this question to the Italian Hygienic Society, 59 were in the affirmative. "We," says the author, "have inhaled, inhale, and undoubtedly will always inhale, not an unconsiderable number" [of tubercle bacilli]. In a lesser number we take them in with our food, as, for instance, milk from tuberculous cows. It is time to cease trembling before the "rods"; it is time to place them in their very modest position in the causation of disease; it is time to consider as truthful the idea of Vergely that "the soil is all, the microbe nothing." In conclusion, he recommends as an effective prophylactic against consumption not the free spittoons, but improvement in the hygienic and dietetic conditions of the poor, so as to fortify their organisms against infection.

Relations of the State to the Consumptive. John H. Pryor, M.D. (*Med. News*, Feb. 18, 1899), makes a strong plea for the establishment of a State hospital for incipient consumptives in the Adirondack Mountains on land owned by the State of New York. It will be remembered that the Forest Reserve of New York now owns over 1,000,000 acres; and no better use could be made of State property than to care for some of the 50,000 ill with tuberculosis now residing in the State of New York. Dr. Pryor believes that the number of deaths from that disease—now numbering 14,000 *per annum*—could be lessened at least one-half; and

he shows the immense saving to the State, amounting to many millions of dollars, which might thereby be saved, by proceeding to establish State Sanatoria. Speaking of the consumptive, Dr. Pryor says: "He belongs to the only class of afflicted for whom no intelligent provision has been made. The conditions and the circumstances surrounding his distress make him the unique, pathetic victim of an anomaly in our system of charities.

. . . Thousands die simply because they are poor and cannot obtain help at the proper time. The consumptive should be cared for until he is well, not until he is dead. We are working at the wrong end of the problem. The idea that consumption is necessarily fatal must be combated, and there can be no good reason why the consumptive alone should be denied any chance to fight for his life. Shall something be done for the consumptive as well as for others suffering from disease in the only rational way that promises anything, or shall the old, wasteful, cruel, let-alone policy prevail?" No doubt this is the most vital philanthropic and economic problem of our time.

SURGERY.

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Hip Disease: Its Treatment and Results. McKenzie (*Can. Pract. and Rev.*, Jan., 1899) summarizes his views on this subject as follows: (1) Hip disease is a local manifestation of a constitutional disease. (2) Early operative interference is seldom justifiable. (3) As soon as softening can be determined, the surgeon should operate and obey indications, observing all care not to injure needlessly the mechanical integrity of the joint, and knowing that he is but aiding nature by removing tissue which she has already cast off. (4) In the future management of the wound, the principles of asepticism must be carefully observed. (5) From the earliest moment, efficient protection for the joint should be secured and constantly maintained by a well-fitting mechanical appliance. (6) Constitutional treatment is indicated as in other tubercular affections. Great emphasis should be laid on obtaining the freest exposure to sunlight and fresh air. (7) After excision, a perfect recovery is never effected, the mechanical integrity of the joint having been interfered with.

(8) Following mechanical and constitutional treatment, perfect restoration of function is sometimes obtained. (9) Even when softening of tissue occurs and necessitates incision, there is sometimes a perfect restoration, and frequently a highly useful return of joint function.

The Oxygen Treatment of Wounds. Stoker (*The Med. Press*, Feb. 8, 1899) has found by experimentation that the most beneficial results are produced by the continuous exposure of the parts affected to the oxygen gas. Contrary to the ordinary opinion, that the oxygen treatment is only useful in cases of chronic ulcers and sores, this author finds that the most brilliant results are seen where the treatment is used in cases of recent wounds, burns, etc., both in reference to the rapidity of the healing as well as to the nature of the new skin formed; for it is not any ordinary cicatrix that is produced, but a skin almost physiologically perfect. The author reports the following cases in which the results produced were perfect: Chronic senile gangrenous ulcer, in a patient 83 years old. Contused wound 3 weeks old and infected, in a patient 47 years old. Extensive lupus of the face and ear, that had been rapidly spreading for two years, despite treatment by various methods. In these cases the author suggests: (1) To remove the diseased surface by scraping; (2) the skin grown under the oxygen is almost physiologically perfect and is more capable of resisting; (3) the formation of oxidized toxins on the wound influences areas outside and tends to prevent extension.

Intravenous Saline Injections in Severe Hemorrhage. Cobb (*N. Y. Med. Jour.*, Jan. 28, 1899) calls attention to the value of these injections by detailing a series of experiments which showed the ease with which this operation can be performed; the condition of the blood after the injections; the point where it is hopeless to expect favorable results from saline injections; the different temperatures at which saline solution may be injected without doing harm; their pressure effects on the circulation and their effect when combined with oxygen. The great value of these injections has been over and over again demonstrated in cases of serious hemorrhage, and their value in saving lives cannot be too forcibly stated. This author has shown that any one can introduce them with safety who is fit to perform the most trifling operation, all that is essential is asepsis. Complicated apparatus is not necessary; clean apparatus is. A canula from any instrument case or a medicine dropper will do, if boiled. The canula prepared by instrument makers is more convenient. A syphon made by passing a rubber tube into a graduated bottle, or any large bottle in which the amount of solution used can be readily estimated, is all that is required. An ordinary self-injecting fountain or Davidson syringe may be employed. No patient need die from hemorrhage without a trial of this method; any surgeon can improvise the necessary apparatus. What is necessary is, that it be employed immediately. The scrubbing of the arm or field of operation must be as thorough as for any operation. A vein is selected and cut down upon. Two ligatures are passed around it, about an inch apart.

The fluid is started through the tube and canula; the vein cut into between the ligatures and the canula inserted and tied in. The lower ligature is tied and cut short, while that upon the canula remains. The flow of the solution during the insertion of the canula prevents air from entering the vein. After the solution is introduced dissect up the vein for about 2 inches put on a second ligature and cut out the portion of vein between the ligatures.

The temperature of the saline solution should be about 114°F; it need not be absolute, if it does not feel too warm for the finger, it will not do harm, nor need it be cooled if the thermometer shows it to be 125°F. When given in conjunction with oxygen inhalations, its efficiency is increased. The venous injection is preferable to the subcutaneous; it is rapid, and the desired effect is produced when it is most needed. The bandaging of the extremities and the position of the patient are not to be omitted. Too much pressure must not be produced, the volume of the pulse and action of the heart must be carefully studied. A tablespoonful of salt in two pints of boiled water is efficient, and better than waiting to measure and sterilize a solution while the patient dies. Saline solutions and oxygen in uremic convulsions and threatened eclampsia have been proved to be most potent agents against these conditions.

The Treatment of Appendicitis. Chauvel (*Gaz. des Hop.*, Jan. 26, 1899), in reviewing the cases of appendicitis that occurred in the French army, found that there were 171 cases; 83 were treated medically, while surgical intervention was necessary in 88 cases. The diagnosis was not made sufficiently early in many cases, so that the patients were often late in coming into the hospital. The mortality was found to be greater in those who came into the hospital late. The diagnosis should therefore be made as soon as possible, and the appropriate treatment applied. The marked pathological changes found in the appendix, *post-mortem*, seem to indicate the value of early operation. The mortality was greater after operation than where medical treatment was employed; but only the more serious cases were submitted to operation. Early operation in the same way was shown to be more fatal than the delayed intervention. Prolonged search for the appendix is not without danger. In his conclusions, he believes that mild cases are curable by medical treatment. Intervention should be delayed until suppuration is evident, and he prefers the later operation. Although the removal of the appendix is advantageous, it is not essential, and too persistent a search is dangerous and inadvisable. In general peritonitis, immediate operation and extreme thoroughness are always indicated. Operation between the attack, *i.e.*, in the interval, is only permissible where the symptoms are persistent and the patient desires it.

The Mississippi Valley Medical Association will hold its twenty-fifth annual meeting in Chicago, October 3 to 6, 1899. The committee of arrangements promises a number of attractive features. The president is Dr. Duncan Eve, of Nashville. It is requested that titles of papers be sent at once to the secretary, Dr. Henry E. Tuley, Louisville, Ky.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Hemorrhage Following Removal of Adenoid Vegetations (Ueber Blutungen nach operativer Entfernung der Hypertrophischen Rachenmandel). H. Cordes (*Deutsch. Med. Zeitung*, No. 25, 1899) holds that these hemorrhages may be due to the following causes: (1) General disease, such as hemophilia. (2) Cardiac affection, particularly hypertrophy of the left side and arteriosclerosis. These affections play no role in children, but should be taken into consideration in the removal of the buccal tonsil in adults. (3) Certain anomalies of the pharynx, with especial reference to the position of the internal carotid. There must also be described the existence, beneath the posterior wall of the pharynx, on a level with the anterior surface of the atlas, of an osseous crest, which in certain cases may be very prominent, render the operation difficult, and occasion, if it be cut away, alarming hemorrhage. Similar result may come from the bony prominence described by Grünwald on the posterior border of the septum, known as the wing of the septum. (4) The previous application of cocain may be a cause of grave hemorrhage. (5) Shreds of vegetations, remaining adherent to the posterior wall of the pharynx after operation, occasion a hemorrhage which ceases when the offending material is removed. (6) A cause of hemorrhage after ablation of adenoid vegetations, which has not heretofore been described, and of which the author has seen two cases, is found in adult females when the operation coincides with their menstrual period. (7) At other times hemorrhage occurs without any assignable reason. It is always in order to remark that if one uses a very sharp instrument hemorrhage may very likely follow. (Abstracted by Jankelevitch in *Rev. Hebdom. de Laryng.*, etc., No. 20, 1899.)

Protargol in Rhinology and Laryngology (Das Protargol in der Rhinolaryngologischen Praxis). Alexander (*Soc. Laryng. de Berlin*, Feb. 3, 1899) has employed in chronic catarrh of the pharynx, especially that form intermediary between the hypertrophic and atrophic varieties, applications of a 1% aqueous solution. In similar conditions in the larynx he has used a $\frac{1}{2}$ % solution, and in the nose a spray of a 1% solution, to which 10% to 20% glycerin has been added. In uncomplicated suppuration of the mucosa of the maxillary sinuses he injects 50 c.c. of a 5% solution of protargol, after thoroughly cleansing the cavity with sterile water. In vasomotor rhinitis and hay fever, he massages the nasal mucous membrane with a 1% to 5% solution of protargol. By this means he has sometimes improved the patient's condition when all other measures failed. Benefit is noticed after the

third or fourth visit. (Abstracted by Rosenberg in *Rev. Hebdom. de Laryng*, etc., No. 18, 1899.)

Contribution to the Study of Leucoplasia Buccalis (Contribution a l'etude de la Leucoplasia Buccale). Legrand (*These de Paris*, 1896) draws the following conclusions: Leucoplasia developed in old syphilitics should be considered, as tabes and general paralysis of a specific origin—a parasyphilitic affection. In this condition, specific treatment should not be employed, for it is not only useless, but harmful and dangerous. The only treatment capable of avoiding epitheliomatous degeneration, which so frequently occurs, is early surgical intervention. (Abstracted by F. Ardenne in *Rev. Hebdom. de Laryng*, etc., No. 20, 1899.)

The Sensation of Taste Induced by the Electric Current (Ueber den Elektrischen Geschmack). Zeyneck (*Centralbl. fur Physiol.*, XII., 10, 1898) says that as the sensation of taste varies with the intensity of the current employed on the tongue, the gustatory sensation thus provoked should be considered as an electrolytic action. As to knowing what point of the tongue is the seat of this electrolysis, the author supposes that there exists between several a decomposition of the salts of the saliva effected by the current. (Abstracted by Rosenberg, *Rev. Hebdom. de Laryng*, No. 16, 1899.)

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Sudden Paralysis of the Third Pair of Nerves and Interstitial Keratitis in Acquired Syphilis. Fromaget (*Annales de la Polyclinic, Bordeaux*, Apr., 1899) reports an interesting case of ocular complications of syphilis in a woman of 39. She had been suffering with recent interstitial keratitis, and, while under treatment, was suddenly affected with complete paralysis of the third pair of nerves. Going to bed apparently healthy, with the exception of the keratitis, she awoke the next morning with ptosis, external strabismus, dilated and inactive pupil, in fact, involvement of the entire external and internal musculature supplied by the third pair. It seemed as though not a single fasciculus of the nerves had been spared. Under full doses of iodids, electricity and intramuscular mercurial injections, there has been a gradual improvement in the paralysis, but by no means a recovery. The corneal condition has improved markedly. Fromaget believes that on account of the rapid onset and complete involvement, the paralysis was due to hemorrhage of the nerve-trunks. Had the paralysis been less extensive, a nuclear lesion might have been suspected; but certainly the rapid onset precludes the possibility of neuritis, exostosis, or gumma, or other intracranial syphilitic lesion being the cause.

A Peculiar Form of Corneal Infection of the Serpiginous Type. Morax and Petit (*Le Progrès méd.*, Mar. 25, 1899) have observed in 2 cases of serpiginous forms of corneal infection instead of the usual pneumococcus, a special bacillus which, by its abundance and unique position, must be a formidable etiologic factor. These cases came on slowly, without pain, and presented a superficial ulcer with a progressive border, accompanied by considerable hypopyon. The micro-organism of the ulcer resembled the bacillus of subacute conjunctivitis. It liquefied gelatin and coagulated serum; and grew on bouillon. It was decolorized by Gram's method, and multiplied freely at a temperature between 15° and 37° C. It was not pathogenic to the lower animals.

Iridocystectomy for Occlusion of the Pupil. Ring (*Univ. Med. Mag.*, May, 1899) reports a successful operation for entire closure of the pupils by a yellowish exudate or pseudo-membrane; the result of iridocyclitis following cataract extraction. The iris fibers were well drawn up toward the upper periphery of the cornea. Vision was reduced to light-perception and questionable light-projection. Although this condition is rare with the present aseptic precautions and improved operative technique, yet it does occur, and has always constituted a very intractable complication. In consequence of Ring's good result, his *modus operandi* possesses especial interest. Following closely the directions of Knapp, a horizontal incision was made with Beer's cataract-knife, 2 mm. from the lower corneal margin, and from 5 to 6 mm. in length. After entering the anterior chamber, the handle was depressed and the point of the knife carried to the portion of the iris just under the yellowish-white exudate or pseudo-membrane, and the iris transfixied by a horizontal opening, 4 mm. in extent. The iris and pseudo-membrane were then caught with a Tyrrel hook and a clean iridectomy made down and slightly in. As there was considerable pseudo-membrane posterior to the coloboma thus formed, the hook was introduced a second time, and a portion of the pseudo-membrane excised. The operation was performed under strict antisepsis; atropin was instilled at its close, the patient put to bed, and the resident instructed to use ice compresses in the event of reaction. Recovery was rapid and uneventful. When the dressing was removed, at the end of 24 hours, there was practically no reaction. The patient recognized faces at once, and counted fingers readily, and at the end of a week, with an appropriate lens, told the time on the dial of a watch with absolute accuracy. At the end of about 3 weeks the distant vision, with the appropriate correction, was 20/LX, with some letters of 20/L. An operation that makes possible so gratifying a visual result in a series of cases ordinarily unpromising is surely worthy of very general trial.

The Etiology and Mechanism of Choked Disc. Deyl (*Wiener klin. Rundschau*, Apr. 13, 1899) concludes that choked disc is caused by compression of the central retinal vein, either at the point of emergence or just before it emerges. The pressure is due to the outer sheath of the optic nerve, which is forced away from the nerve proper by effusion or extravasation of blood from increased intracranial pressure or some obstruction of the optic

foramen. In some cases the choked disc is due to stagnation of lymph and consequent compression of the veins. Of the many causes of choked disc are cerebral tumors, akromegaly, syphilis, tuberculosis, nephritis, etc. The theory of primary edema is refuted by the fact that the vein is dilated rather than contracted in its farther course. Deyl calls attention to the new diagnostic sign—the impossibility of artificially controlling arterial pulsation on the papilla—which may often differentiate brain-tumor from nephritis as a cause of choked disc

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Diverticulum of the Bladder. Wright and Coates (*Lancet*, Mar. 18, 1899) report a patient whose misuse of a catheter for 11 years resulted in a chronically inflamed bladder with a diverticulum behind and to the right forming a cyst 4 times as large as the normal bladder. Following three attacks of gonorrhea and the inception of syphilis, he began to pass a catheter, a No. 12. This he never cleaned, and rarely lubricated. He carried it coiled in his pocket. When the man came into the hands of Mr. Coates, he was compelled to pass the catheter twice every hour. His temperature was 102° F., pulse rapid and feeble, and his urine foul, bloody and mucopurulent. His condition was slightly improved by internal urinary antiseptics and repeated bladder washings. But as the man's condition became worse an operation was done, a supra-pubic cystotomy. The bladder wall was so thickened that it was difficult to push the knife through. The man died a few days after the operation. At the necropsy suppurating kidneys were found. There was no urethral obstruction. The diverticulum is explained by the constant irritation of the catheter and infection thickening the bladder wall except in one weakened spot, where the sacculus formed. The case resembled closely Sir John Erichsen's.

Ligation of Spermatic Vessels for Prostatic Hypertrophy. M. Monad (*Corres. Med. Press and Circ.*, Apr. 5, 1899), at a meeting of the Surgical Society, Paris, reported the case of a patient with prostatic hyper-

trophy and acute urinary retention, who was relieved after ligation of the spermatic vessels. That the testicle did not necrose, but merely diminished slightly in volume, was attributed to usual escape of the artery of the vas deferens in such ligations. M. Regnier thought that the ligation of the spermatic vessels frequently provoked testicular lesions, especially if any sepsis occurred. On the other hand, M. Bazy stated that such resections of the deferens canal, as pointed out long ago by Sir Astley Cooper, in no way interfered with nutrition of the testicle; but, on the other hand, they had no effect upon the hypertrophied prostate.

Acute Diffuse Gonococcus Peritonitis. Cushing (*Bull. Johns Hopkins Hospital*, May, 1899) reports two cases of this rare, and hitherto apparently unrecognized, affection. While gonorrheal infections extending from the genital organs to the peritoneum usually remain localized, the possibility of generalized peritoneal infections is thus shown. It is also pointed out that the infection may reach the peritoneal cavity during the menstrual, as well as during the puerperal period.

GYNECOLOGY.

UNDER THE CHARGE OF

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Endometritis, Congestion, or What? Barber (*Yale Med. Jour.*, Mar., 1899) discusses the usual methods of treatment in endometritis, and emphasizes his belief in the following résumé: (1) That simple endometritis, uncomplicated, is rare; that a leucorrhea, when present, is not indicative of it, without the presence of micro-organisms, which would argue that all scrapings should be microscopically examined for correct diagnosis. (2) That gland tissue disturbances of the endometrium, whether from congestion or lack of blood supply, is not, according to Prof. Welch, an inflammation, and, therefore, not an endometritis, in the true definition of the term. (3) Such disturbances are better, and more scientifically treated from the medical than from the surgical standpoint. (4) That the curette, a powerful factor in the treatment of some forms of endometritis, is not curative in this form, and is, according to good authority, used much too frequently without due reason, and often by the irregular, with criminal intent.

The Curette in Gynecology. Robinson (*Milwaukee Med. Jour.*, Feb., 1899) discusses the uses and abuses of the uterine curette. He be-

believes that immediately after abortion, miscarriage, labor and in infected uterus, the sharp curette has no place. The dangers of the curette are numerous. The first danger is perforation of the uterus; however, the perforation may be due to preliminary dilatation. Perforation by the curette is not uncommon in malignant disease. Large numbers of operators report perforation by the curette. In a septic uterus the walls are very friable, and extremely easy to perforate. After abortion or labor, perforation by the curette is most frequent and easy at the old placental site. Most inexperienced operators perforate the uterus while incautiously introducing the curette. To prevent perforation by the curette it is well to hold the hand on the fundus and locate the points which one wishes to curette. Should the curette slip beyond the resistance, it is well to withdraw it and measure with a blunt sound. With a perforated uterus, use ergot and opium. Uteric perforations by the curette do not call for hysterectomy. If intestinal hernia occurs, it would require hysterectomy. The curette makes rapid pyosalpinx out of salpingitis. Never curette without previous careful bimanual examination.

"The Uterus Again." Under this caption Fish (*Annals of Gynec. and Pediatrics*, Mar., 1899) gives his reasons why the uterus should not be sacrificed, if possible to retain it. He would leave the uterus: (a) Because it is an important sexual organ in its natural site, and consequently not in the way of any other pelvic organ. (b) Because it preserves the vaginal vault, and, when in *suspensio*, maintains the contour and natural length of the vagina. (c) Because it precludes the possibility of vaginal hernia, prevents prolapsus vaginae, and delays atrophy of the vagina. (d) Because it minimizes nervous shock and depressing mental manifestations. (e) Because it maintains the pelvic diaphragm and the anatomical geography of the pelvic contents. (f) Because in the event of successful ovarian transplantation it might be reinstated as an organ of procreation.

Ventral Hernia. Keefe (*Boston Med. and Surg. Reporter*, Feb. 16, 1899), in operating for ventral hernia, brings the fascia together with a buried silver-wire mattress suture or a machine-stitch of silkworm gut, the ends of which are brought out through the skin at either end of the wound, and removed at the end of 4 weeks. The adipose tissue and skin may be united with catgut, or silkworm gut may be used in the integument.

Ovarian Tumor Removed During Typhoid Fever. Cushing (*Annals of Gynec. and Pediatrics*, Mar., 1899) reports the successful removal of a large ovarian tumor during the acute stage of typhoid fever. The patient was a young girl, aged 11 years and 10 months, and had never menstruated. During 6 months prior to the operation, abdominal enlargement had been noted. Typhoid fever developed, and, the symptoms being urgent, an operation was performed; and, both ovaries being diseased, they were removed. The patient had 13 hemorrhages from the intestines 13 days after the operation, and had a long and severe struggle with the fever, being ill over 3 months. She finally made a perfect convalescence, and has

developed into a handsome, active girl, of great physical and mental vigor, now nearly 18 years old. It is interesting to note that, although the ovaries were removed before puberty, in no respect whatever does she seem, or, as far as can be ascertained in such a delicate matter by her mother, does she feel at all different from other girls of her age.

Curettage of the Uterus and Operation for Laceration of the Cervix. Wathen (*Med. Age*, Mar. 25, 1899) believes that operations for curettage and for cervical lacerations are nearly devoid of danger, if properly performed; and if in the selection of cases good judgment is exercised, the immediate and subsequent results are so nearly perfect that many women are restored to a condition of health, so far as the local disease and the reflex symptoms are concerned, nearly as perfect as before they had any disease of the generative organs. In operations for lacerated cervix, the uterus should be curetted, the cavity irrigated with bichlorid solution or wiped out with iodoform gauze, and then the necessary denudation performed. One reason why operations for cervical lacerations are not more successful is that the denudation is not extended under the cicatricial tissue.

Massage in Malpositions of the Uterus. Rumpf (*Amer. Gynec. and Obstet. Jour.*, Mar., 1899) believes that massage is the most valuable adjuvant we possess in the treatment of retroflexions of the uterus, and that about 50% of the cases will require no other form of treatment. All cases of retro-displacements in which pus and malignant disease may be positively excluded are benefited by this treatment. In his experience, massage has not been satisfactory in cases of antelexion and prolapse.

Treatment of Gonorrheal Vaginitis. Greenberg (*N. Y. Med. Jour.*, Mar. 25, 1899) advises the use of sitz baths of warm water with sodium bicarbonate, twice daily, and 2 hourly douches of sodium bicarb. solution, a gallon each time for the purpose of cleanliness. To kill the gonococci, once a day after the sitz bath and douche, the physician should thoroughly scrub the vagina with soap and water and a soft nail-brush, a speculum should be introduced and the tenacious pus from the cervix mechanically removed; the folds of the vagina should now be put on the stretch by the gradual withdrawal of the bivalve speculum and a 1 to 1,000 bichlorid solution, or, better still, a 5% pyoktannin thoroughly applied by means of cotton on an applicator.

The American Medical Editors' Association held its annual meeting at Columbus, June 5th, under the presidency of Dr. Thomas H. Hawkins, editor of the *Denver Medical Times*. The address was delivered by Dr. J. D. Emmett, editor of the *American Journal of Gynecology and Obstetrics*. The officers elected for the ensuing year are: President, Dr. I. N. Love, St. Louis, Mo.; vice-president, Dr. J. E. Brown, Columbus, O.; secretary, Dr. Dillon Brown, New York; treasurer, Dr. Alexander Stone, St. Paul, Minn.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

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Artificial Dilatation of the Cervix. Frasier (*Le Mois Medico-Chirur.*, May, 1899) advocates bilateral incisions at the commencement of the dilatation stage in primiparae when interference is necessary. Each incision is but $\frac{1}{5}$ of an inch in depth, and is always successful and without danger. He condemns the use of chloral, chloroform, balloons, quinin, injections, etc., as dangerous or inert. Manual dilatation is only to be used as a necessity.

The Value of Posture in the Treatment of Occipito Posterior Positions. Green (*Boston Med. and Surg. Jour.*, Vol. CXL., No. 21) states that in his early practice he was struck with the posture assumed during the first stage by many dispensary patients of kneeling by the bedside with the body forward over the bed and resting on the arms. This position brings the anterior wall of the uterus lowermost and in an unengaged occipito-posterior position the back of the fetus must, by force of gravity, rotate on its long axis and become dependent. He has frequently confirmed this change in position of the fetus upon this posture being employed. If the head is pocketed in the inlet, he advocates at first the knee-chest posture, followed by the kneeling position. If the head has passed the brim, rotation is greatly favored by the latero-prone posture, the patient lying on the side toward which the occiput should rotate. The kneeling posture has the advantage of being a comfortable one for the patient, and the latero-prone position is also easily taken during the second stage.

Over Distension of the Uterus from Excess of Amniotic Liquid. Hibbard (*Mass. Med. Jour.*, June, 1899) reports three cases of hydramnios occurring in his practice. The first case contained 34 pints of liquor amnii and was delivered of twins, both dead, and one an acephalous monster. The second case contained 23 pints, the hydrocephalic fetus being dead. The third case contained 11 pints, with a dead fetus. The placentae of all three cases were similar, being ulcerated in patches and containing pus cells. They were of a greyish-blue color and friable. The cord in the first case was 56 inches long, 35 inches in the second, and 27 inches in the third.

Omphalotripsy. Porak (*La Revue Med.*, May 31, 1899) reports that he has reduced infantile mortality from 10% to 3% since he has adopted force pressure in the treatment of the cord instead of the ligature. Umbilical infection is far more prevalent than is generally understood. He uses a wide crushing forceps which flattens out the cord to the skin level. The result is a rapid dessication.

Three Conservative Caesarian Sections upon the Same Woman. Pollak (*Centralbl. für Gynecol.*, Apr. 15, 1899) reports such a case. The literature shows that 12 similar cases have been reported. The uterine wall showed no signs of thinning at the site of the previous incisions.

The Prophylaxis and Treatment of Puerperal Fever. Moran (*Am. Jour. Obstet.*, June, 1899) discusses the work of recent investigators on this subject. He is confident that the repeated giving of intrauterine douches and the use of the curette in streptococcus infection is decidedly harmful. It is important to determine whether the case be due to simple streptococcus, mixed infection, or other organism, as curative effect with serum is only claimed for the simple streptococcus infection. He reports 3 cases treated with injections of Marmorek's anti-streptococcus serum, which were followed by decided benefit, the bacteriological diagnosis of pure streptococcus infection being previously determined.

Adherent Placenta. Reed (*Jour. Am. Med. Assoc.*, May 6, 1899) discusses the subject under three headings, according to the etiology, viz.: Placental causes, uterine causes and utero-placental causes. Under placental causes is a diffuse connective tissue inflammation, the placenta being firm and of a pale appearance. Syphilis, rheumatism and placenta previa are also included as causes under this heading. Atony of the uterus is the principal uterine cause, also inversion and endometritis. According to Myulasy, a fibrin deposit originating in the decidua and involving the placental surfaces is a frequent utero-placental cause. If the placenta is not removed at once, after a fair trial of manual extraction, he advocates packing the uterus for 48 hours, after which time the placental remnants can easily be removed by the fingers.

Treatment of the Umbilical Stump. Kusmin (*Centralbl. für Gynecol.*, No. 10, 1899) uses a rubber ligature 1 cm. from the abdomen and surrounds the remainder with a plaster of Paris bandage, thus excluding moisture and air and preventing infection.

Postpartum Hemorrhage. Bastain (*Revue Med. de la Suisse*, No. 5, 1899) says that when all other means fail, success can be obtained by introducing a long Cusco bivalve speculum into the vagina, separating the blades widely and packing the vagina tightly with gauze. The speculum is left in place.

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We have no quarrel with the better journalism of the land, which desires the enlightenment of men and the promotion of their welfare. But as in every walk of life the conflicting elements of good and evil mingle, truth and idealism confronted everywhere by utility, Philistinism and sordidness, so the greatest exponent of our average culture, our greatest protection against fraud, shares in one of the most flagrant frauds.

**Patent Medicines
in the Public
Press.**

It has been estimated that, as a nation, we spend a hundred millions annually for patent medicines. This vast sum, which is nearly clear profit, is divided between the advertiser and manufacturer, and reaped from the wage-earners by means of the public press. It would seem that such a palpable fraud needs the knife more urgently than Government departments that are constantly kept in evidence.

The same credulity that expects early riches from "pools" and fictitious corporations hopes for a wonderful cure by a remedy which has escaped the wise men of medicine and was confided to the manufacturer's forefathers by some aboriginal root-digger. Nor is this credulous element of human nature a small or unimportant one. The eminent divines and statesmen whose portraits accompany their declaration of faith and lack of understanding eloquently emphasize this human weakness.

If the affluent supported this deception there would be less room for complaint, but social vanity requires a quackery of different order than is exploited on the advertising pages of the daily paper or the sign-boards of the town.

The patenting of medicines should be entirely abolished. As it is now, a great art is used for commercial purposes whose essential mercantile feature has nothing whatever to do with the application of drugs. If this cannot be done away with—and it probably cannot—the law can exact that the precise formula be given on the label of all remedies and any deviation or adulteration should be vigorously dealt with.

We are a long-suffering people; and, having had these abuses with us so long, we have become indifferent to them, and accept the situation as the inevitable consequence of human credulity. But as the law undertakes to protect the people from all manner of frauds, and is constantly limiting their operation, there is reason to believe that before many years the public press will be closed to this evil, as in foreign countries, and the medicinal parasites will be driven to obtain bread according to the original decree, by the sweat of the brow or brain sweat, but not by giving worthless concoctions for the wages of toil.

The Woodbridge treatment of typhoid fever has failed to establish any specified line of procedure; but, like many new departures, it brings to the foreground some element of truth valuable to the art. The eliminative and antiseptic measures now employed in the intestinal tract constitute a marked advance in the management of the disease over the old methods. The character of the typhoid evacuations, fetor, gas, etc., point to the generation of toxins which should, as far as possible, be restricted and eliminated. Otherwise they give rise to a multitude of local lesions—hepatitis, nephritis, parotitis, pleurisy, pneumonia, etc.—all doubtless due to the direct action either of the bacteria themselves or their products. This view of the causation of complications in the acute infections originates with Prof. Babes, of Bucharest, who found the bacteria of nearly all the acute infections abundantly present in the gray matter of the brain and cord, probably producing the phenomena of these diseases.

Measures therefore to keep the various secreting organs active, and thus eliminate the poisons developed in the intestinal tract or elsewhere are naturally suggested, and to check a typhoid diarrhea would be locking up the poisons in the system. This does not justify drastic purging, which is equally undesirable by depriving the economy of its protective fluids, and thus permitting extended invasion. Mercury in small doses and podophyllin are highly useful as eliminatives, while naphthalin, salol, benzosol, thymol and sulpho-carbolate of zinc can be effectually used to check intestinal fermentation. From one to three copious stools in twenty-four hours is to be desired according to the intensity of the process, nor do frequent stools appear to deplete the patient. It is usually conducive to quiet and comfort, by removing the gas and irritation of the bowel contents, which is often still more effectually done by washing out the bowel with boric solution, a tablespoonful to the quart of sterile water with the chill off. Colon irrigation with cool water is one of the most valuable procedures in reducing fever, flushing the intestinal capillaries, the kidneys and the portal system of the ptomaines and waste and thus affording relief to the overworked excretory functions.

The cosmic element in disease is a field in which the most powerful microscope or the most extended research has shed no light, and yet, in the perfect distribution and adaptations of life, there is no room for doubt that the great infections come under the dominion of law just as other living principles, and that the law will some day be known is quite probable. Why are some diseases cyclical in their appearance, or why do others, like the semi-active volcano, suddenly break into frightful activity and leave widespread death in their wake? What this strange relation is between infective disease principles and the forces of the planet is too subtle for our present analysis; but analogy suggests its existence.

Within historic times syphilis and leprosy have once taken on an acute epidemic character which invaded practically the world, and yet Science has nothing to offer in explanation of such a phenomena. No one for a moment thinks any new infirmity was launched on suffering humanity by the jealous gods, for doubtless prior to this time (1495) syphilis was a mild or even much milder disease than in our own period. It is not sufficient to regard disease as fixed in character, for, like all life, the infections likewise are probably evolutionary, and show in the changes of the planet's life just as higher orders. It is entirely erroneous to conceive of disease to-day as being the same that vexed and destroyed the tertiary monsters or our primitive ancestors. The law of evolution is all inclusive, and man's diseases are changing like himself. As races of men, animals and plants have fulfilled their destiny in Nature's economy and passed away, so their diseases have likewise probably perished with them. In what way new diseases may develop, is not clear; but, as new types of men are developing from their predecessors, entirely differing in features, temperament and character, so the infective diseases have possibly varied in the ages. The kinship of variola, vaccinia and varicella, of measles, diphtheria and scarlatina, of syphilis, tuberculosis, cancer and leprosy, would strongly suggest a common ancestry for some of these types which have been modified in man by his departure from the plane of animal life.

All the great epidemics are growing milder, aside from sanitation, vaccination and any limitations we may place about them; but whether from the environment of civilization or their innate tendencies is unknown. We may fancy ourselves freed from the terrors of cholera, plague and small-pox before many years; but does not the influenza arise without warning in the most various parts of the earth and spread over it without reference to any law in our knowledge, and may not other and even more destructive diseases develop, of the same character?

Could we but reveal the pathology and bacteriology of the past, what a marvellous tale would be unfolded to our eyes! The forces of life are also the forces of death, and the secret of the diseases with which man has warred for supremacy since the beginning is locked up with the mystery of

his destiny, and beyond his control and cure cosmic relations operate for their perpetuation in the economy of existence which no understanding can encompass.

Floating around among the daily papers we have observed a story concerning an old citizen of a Western town, who, twenty-eight years ago, was said to have been given up to die by eight different physicians on account of advanced lung trouble. He has lived to see five of the eight erroneous prognosticators die before him, and, as the story goes, expects to help bury the other three.

**Cock-Sureness in
Prognosis.**

This yarn may or may not be true—probably not; but cases do frequently occur in which physicians, whose bump of carefulness is not so well developed as their habit of cock-sureness, have condemned to death patients who lived long afterward to point the finger of scorn at them. For, even when the doctor who has conscientiously given a too gloomy prognosis afterward saves the patient by the most brilliant skill and untiring devotion, it avails nothing to keep his reputation unblemished. No doctor is ever excused for prognosticating the speedy death of a patient who does not make his word good by dying at the time designated. The moral is: Guard your prognosis. There are very few cases indeed in which it is entirely safe and politic to announce that a person must certainly die within a given time. It is much better to say, "The chances are very largely against the patient"; or, "In conditions like this, death nearly always results within a short time."

The *denouement* of the same story contains another moral. The dying man who claims to have survived most of his physicians says that he finally went home, threw away all his medicines, "staid out in the open air all I could," and by the end of the year was well. It is precisely in lung cases that similar miracles do sometimes happen, even in the serious cases and in just this way; while in the earlier stages, such a fortunate result may be expected as the rule if the patient will put aside all doubtful or disturbing drugs and just stay out most of the time in the open air in almost any climate where there is not a dense population or contaminated air or water. In other words, an abundance of pure, out-door air and sunshine will cure a large proportion of pulmonary cases under right hygienic conditions without medicines. Such patients should be further instructed that, when unavoidably in-doors, as at meal hours and during stormy weather, they should have the shades or blinds removed from the windows so as to receive the benefit of all the light there is, and to have their windows open day and night, except in the coldest weather. The continuous open-air cure has proved the most efficient so far of any known, and has proven remarkably helpful even in such cold and disagreeable climates as those of northern and central Germany.

**The Open-air
Cure.**

A Louisville physician (Dr. Robert C. Kenner), in discussing the treatment of acute articular rheumatism, objects to "salicylic acid, salicylate of sodium, oil of wintergreen and other drugs of this nature, notwithstanding that they have in many cases given the most brilliant results." He declares that in the last few years he has ceased altogether to administer the salicylates, on account of their depressing effect on the heart and irritant action on both the kidneys and digestive tract. There is, unfortunately, only too much truth in this indictment, and we therefore turned eagerly to the latter part of Dr. Kenner's paper in the *St. Louis Medical Mirror* for May, to learn with what potent yet innocuous remedy he had treated the seventy-five cases the results of which he summarizes. A new anti-rheumatic which could rival the salicylates in curative effects and yet be non-depressing and safe would be a desideratum. What was our surprise to find that it was salophen—a proprietary remedy of value no doubt, but itself a salicylate, being a derivative of salol, which is 60% salicylic acid and the remainder phenol, the latter a drug which in its ordinary forms is more irritating to the kidneys than the usual alkaline bases—soda, potash and lithia.

Dr. Kenner makes the claim that salophen "does not interfere with digestion and does not produce biliousness or heaviness, and consequent melancholy, as do the salicylates," adding: "It has never shown any depressing action on the heart, nor does it irritate the kidneys." Unfortunately, it is not usually until new drugs and drug-combinations have been in use some time that their untoward effects are fully reported. The earlier accounts of them are nearly always *colour de rose*.

It is probably true that salophen acts somewhat more pleasantly than the other salicylates, upon the digestive organs at least; yet, all the same, it contains considerable salicylic acid and apart from the ethical objections to the use of a proprietary remedy, it would not be wise to push it boldly in patients with diseased hearts or kidneys on the supposition that it is incapable of doing harm.

EDITORIAL MENTION.

THE diagnostic value of lumbar puncture in epidemic cerebro-spinal meningitis is now well recognized, and the rather frequent use of the method during recent epidemics has confirmed the expression that this procedure, when properly performed, is nearly free from danger. Cases have not been wanting in which the puncture seemed to have a therapeutic as well as a diagnostic value. Rolleston and Allingham have recently (*Lancet*, April 1, 1899) reported a case of cerebro-spinal meningitis for which laminectomy

of the seventh and eighth dorsal vertebrae was successfully performed. The patient was a man aged twenty-four, and had been ill six days. As the symptoms were indicative of cerebro-spinal meningitis, and were progressive, the operation was determined upon. On operating, the dura mater was found to bulge and was incised for one inch, permitting the escape of three ounces of coagulated lymph and cerebro-spinal fluid. A drainage tube was introduced, and it was necessary to continue drainage for over a month. The *diplococcus intracellularis meningitidis* was not found. While the case was not strictly typical or fulminant and while recovery might have occurred irrespective of the operation, the prompt amelioration of symptoms following the free drainage is at least suggestive. With a malady of such high mortality, a wider application of cerebro-spinal drainage by puncture or by direct incision certainly seems warranted in cases under favorable auspices.

As a result of his very large experience, Prof. E. E. Montgomery, in a recent clinical lecture, confirmed the prevalent belief that one of the most frequent causes of abortion is syphilis. In view of this fact, he urged his hearers to search thoroughly for a specific history in all cases in which women give a history of having many times aborted. When the history confirms the suspicion, the anti-syphilitic treatment should of course be pushed for a considerable time; but Montgomery urges that when the history leaves the question in doubt it is a good thing to give iodid of potassium anyway, claiming that it is one of the most effective remedies in decreasing the irritability of the uterine mucous membrane. In this connection he says: "I have seen many patients in whom it is impossible to elicit any indication of syphilis, who have done well and carried the fetus to full term upon the use of iodid of potash. So much value have I seen from the use of this drug that it is now my custom in every case of irritable uterus where abortion is feared, to place the patient upon the use of iodid, five grains three times a day, given in water after meals. In cases in which sclerosis or areolar hyperplasia of the uterus has occurred, I know of no plan of treatment which will insure a woman to complete her pregnancy."

It is worthy of mention here, that tincture of cimicifuga, which seems, in small doses, to have a sedative action upon the genital centers, will often prevent a threatened abortion when administered in drop doses every two hours. We have often seen this prove effective after opiates had failed.

Successful Surgical Treatment of Aneurism of the Abdominal Aorta. Langdon also reported before the London Clinical Society a case of aneurism of the abdominal aorta for which coeliotomy and the introduction of 5 feet of silver wire in the sac were successfully performed nearly one year before.

BOOK-REVIEWS.

DEFECTIVE EYESIGHT. By D. B. St. John Roosa, M.D., LL.D., of New York. New York, The Macmillan Company. 1899. Price, \$1 net.

The small volume is a revision of the author's "Determination of the Necessity for Wearing Glasses," first issued in 1888. The book is well written, and in a vigorous and dogmatic manner; but it is so full of antiquated and erroneous statements, that we feel compelled to spend more space in correction than is usual in the review of unimportant books. It is this class of books that is aimed directly at the general public, who are naturally without the necessary knowledge for critical judgment, and who accept as scientific truth anything set before them by a medical man of reputation.

The author says we are suffering from a glass-wearing craze. He has grave doubts about the remote reflexes of eye-strain. He denies the existence of muscular asthenopia. He appears to be against correction of both eyes in anisometropia and cites an illustrative case in which he allowed a patient with $\frac{20}{70}$ vision in one eye and $\frac{20}{20}$? in the other, whom the proper cylindric correction would have given equal and normal vision in the two eyes, to go without glasses simply because none that she had worn before were comfortable. If the examination had been properly conducted under mydriasis and the patient given instructions to persist absolutely in wearing glasses for at least one week, despite her feelings, she would most likely have worn glasses with great comfort and satisfaction the balance of her life. While crying down the wearing of proper glasses in defective eyes with absence of ocular symptoms, the author loses all sight of the remote reflexes and gradual disruption of the nervous equilibrium by the constant nervous loss in persistent accommodative strain.

At first thought, the statements and deductions in this book will seem inexplicable to skilled refractionists who are daily relieving asthenopic patients with even very weak glasses. However, all is made plain by a perusal of the author's condemnation of cycloplegia and his advocacy of such unreliable instruments as the ophthalmoscope and ophthalmometer, in the measurement of errors of refraction; notwithstanding the generally accepted belief among scientific physicians that for accurate refraction complete ciliary paralysis is absolutely necessary; that all objective tests except retinoscopy under complete cycloplegia are unreliable and often distinctly misleading in low degrees of ametropia; and that all tests must be confirmed by subjective examination with the test-lenses and test-letters.

The author is also unsound in his treatment of presbyopia. He cites one instance in which he did not order cylinders in a case of astigmatism in both eyes and of unequal degree, because the patient seemed to read comfortably with simple spheric lenses. He is even inclined to doubt the existence of pure presbyopia. The one redeeming feature of the book is the condemnation of muscle operations and prisms. But here again our radical author denies the existence of muscular asthenopia or that good can come from prism-exercise in insufficiency of adduction.

The book may be a safety valve to rampant faddism, but it is certainly an unsafe manual for persons seeking knowledge relative to the diagnosis, symptoms, results and treatment of ametropia.

DISEASES OF THE EAR, NOSE, AND THROAT AND THEIR ACCESSORY CAVITIES. By Seth Scott Bishop, M.D., D.C.L., LL.D., Professor of Diseases of the Nose, Throat, and Ear in the Illinois Medical College; Professor in the Chicago Post-Graduate Medical School and Hospital, etc. Second edition. Thoroughly revised and enlarged. Illustrated with 94 chromolithographs and 215 half-tone and photo-engravings. $6\frac{1}{2} \times 9\frac{1}{2}$ inches. Pages xix.-554. Philadelphia, The F. A. Davis Co., Publishers, 1914-16 Cherry Street. Extra cloth, \$4 net.

The ear, nose, and throat can well be considered together, since they are not only neighboring but intimately connected organs. It would be more appropriate, perhaps, to name the ear last in the collection, since it is rather less important than the others, and some of its more frequent affections result usually from disease of the nasopharynx by a direct extension. But this is a point of minor importance. The author of the work before us seems to be almost equally at home in each of the four parts into which it is divided, though he has treated the aural portion of his subject, and especially the important mastoid operations, with somewhat more fullness and thoroughness than anything else. In his preface he announces that he has aimed to make the book "a key, or introduction, to the exhaustive treatises already in the field," and says further: "This work was designed, first, to help students in preparing for their degree; second, for those progressive practitioners who wish to acquire the proficiency necessary to properly treat those patients who are unable to visit specialists."

In view of this modest announcement, Dr. Bishop must be credited with having fulfilled his task acceptably and well. The book will prove exceedingly useful to a very large class of practitioners. Indeed the exhaustion of the first edition in a year and a half is evidence that it fills a want. The best features of the work are the clear and interesting manner in which the various subjects are discussed, the large number and graphic character of the illustrations, the very full list of formulas for atomization, etc., and, especially, the skill and excellent mastery of English, by means of which the author has condensed a satisfactory account of so large a group of allied subjects, based upon the most recent discoveries and methods, into one convenient volume. There is little to be said by way of criticism, though in the very interesting chapter on "Hay Fever" the extreme views of Haig have been somewhat too blindly followed. Like that eminent authority and too many of the specialists in diseases of the eye and upper air passages, Dr. Bishop sees the effects of uric acid only, where workers who have delved more deeply into the morbid aberrations of tissue metamorphosis have recognized a large number of other known and unknown toxic products as equally if not more at fault. We cannot agree, either, with the author in advising the use of antipyrin or any of its vicious brood of congeners in acute inflammatory conditions, such as those of the middle ear, when other safer and more efficient remedies are at hand. The second edition has been increased one-fourth in size, and, in addition to many

valuable new engravings, it has been rendered much more complete by the introduction of entirely new chapters on "Related Diseases of the Eye and Nose" and on "Life Insurance Affected by Diseases of the Ear, Nose and Throat," as well as special illustrated articles on "Direct Laryngoscopy or Autoscopy," etc. It is a neat, handsomely printed volume, and many of the illustrations are superb.

TEXT BOOK OF OPHTHALMOLOGY. By Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation, revised from the seventh enlarged and improved German edition. By A. Duane, M.D., Assistant Surgeon Ophthalmic and Aural Institute, New York. Second American edition. New York, D. Appleton & Co. 1899. Price, \$5, in cloth.

The second American edition of this monument of ophthalmic erudition is most welcome. In addition to the merits of lucidity, judicious treatment of the subject, and excellence of proportion and balance that have always characterized Prof. Fuchs' treatise, this edition bears everywhere the marks of thorough revision. Additions and corrections bring the book up to date in all parts, so that it presents the best summary in one volume of modern ophthalmic science that we have. The most marked changes will be met with in the sections upon functional examination, the pathology of cornea and conjunctiva, and diseases of the fundus. Over eighty illustrations have been added. The translator has wisely enlarged and Americanized the section upon the correction of ametropia; and inserted two new sections: upon heterophoria, and upon the use of homatropin and other cycloplegics. These are in accord with the most recent American teaching.

SAUNDERS' MEDICAL HAND ATLASES. ATLAS OF DISEASES OF THE SKIN, INCLUDING AN EPITOME OF PATHOLOGY AND TREATMENT. By Prof. Dr. Franz Mrazek, of Vienna. Authorized translation. Edited by Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology, Jefferson Medical College, Philadelphia, etc. With 63 colored plates and 39 full-page half-tone illustrations. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899. Price, \$3.50.

This atlas, besides the excellent letter-press matter which, though condensed, is clear, graphic and thoroughly up to date, is a marvel of the pictorial art. Those of us who sat on the benches a generation ago had few or none of such extraordinary aids in studying the many delicate differences and peculiarities of diseases of the skin. Such a volume as that now before us must be of the greatest service to general practitioners, since the representations are so perfect and natural, both in detail and color, that by their aid even the physician with eyes untrained in differentiating many of the various eruptions, etc., could scarcely fail to recognize them. The first part of the book, covering 191 pages, is devoted to the letter-press descriptions of the different dermatologic affections with the latest recommendations as to treatment accompanied often by prescriptions. Then follow the 102 full-page plates, beautifully printed on heavy paper. A copious index completes the volume. This is a work which merits unqualified commendation in every respect.

PRESCRIPTIONS BY NOTED THERAPEUTISTS.

FOR MERCURIAL STOMATITIS.

R Thymoli,.....	0.25;
Extr. krameriae,.....	1.0;
Solve in glycerin,.....	6.0.

Adde:

Magn. ustae,.....	0.5;
Natri biborici,.....	4.0;
Sapon. medic.,.....	30.0;
Ol. menth. pip.,.....	10.

Sig. Tooth soap.

R Tr. gall.,	
Tr. krameriae,.....	āā 12.0;
Resorcini,.....	3.0;
Mentholi,.....	0.25.
S. Gargle —LJANTZ.	

FOR DROPSY.

R Uropherin salicyl.,....	5 grms.;
Aq. destil.,.....	120 c.c.;
Vanillini,.....	0.001.
Muc. acaciae,	
Syr. simpl.,.....	āā 15 c.c.
S. A dessertspoonful 3 to 4 times daily.—SCHMIDT.	

PRURITIS.

R Salicylate of methyl,....	2 grms.
Oxide of zinc,.....	20 “
Vaselin,.....	20 “

M. S. Ointment.—LECREDE (Soc. de ther.).

WHOOPIING COUGH.

R Sodium benzoat,.....	72 gr.
Sodium bicarbonat,....	48 “

Ammon. chlorid.,.....	24 gr.
Chloroform water,....	1 oz.
Anise water, to make,...	3 oz.

M. S. 1 to 4 teaspoonfuls, according to child's age, in a little hot milk, every 4 hours —BURNEY YEO (*Practitioner*.)

INFECTIVE GASTRO ENTERITIS.

R Tr. iodi,.....	15-18 gtt.
Aquæ destil.,.....	150 gm.
Syr. Simplicis,.....	20 “
M. S. Teaspoonful every 1 or 2 hours.—DR. GROSH (<i>Semaine Med</i>).	

PALATABLE EFFERVESCENT QUININ.

R Quininæ sulphatis,.....	4
Acidi citrici,.....	10
Syr. simplicis,	
Syr. aurant. cort.,.....	āā 1
Aquæ destil.,.....q. s. ad 20	
M. S. Add 10 or more drops to about 50 grams of water, in which 0.3 gm. of bicarbonate of sodium has previously been dissolved, and drink while effervescing.— <i>Klin.-therap. Wochenschrift</i> , No. 14, 1898.	

EXPECTORANT—ACUTE AND CHRONIC BRONCHITIS.

R Ammon. mur.,.....	8 parts.
Tr. Aconite root,.....	2 “
Syr. tolu,.....	30 “
Syr. wild cherry,.....	120 “

M. S. A teaspoonful every 3 hours. SILVERMAN (*New Eng. Med. Monthly*).

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ORIGINAL PAPERS.

*FEVER AND ITS TREATMENT.*¹

BY H. A. HARE, M.D.,

Professor of Materia Medica and Therapeutics, Jefferson Medical
College, Philadelphia, etc.

WHEN the kind invitation to address you to-day was extended to me some six or eight weeks ago by your very efficient secretary, he also intimated that it would be agreeable for me to discuss, in a paper which should be exceedingly brief, the important and very interesting subject of fever and its treatment.

It is not necessary for me, in the presence of the audience which I am now addressing, to remind my hearers that medicine no longer recognizes the presence of fever as a disease in itself, but insists that in every case a diagnosis should be made as to the cause of the increase in the bodily temperature of the patient, so that at the present time a statement that a certain patient died of fever is as unscientific as the statement which we see so commonly in the daily press, that he died from heart failure.

In both instances, the scientific medical man knows full well that, underlying the failure of the heart and the development of pyrexia, there has been a pathological process which has produced the fatal result. At the same time, an abnormally high bodily temperature is in many diseases the most manifest symptom with which we have to deal, and in the practice of medicine it becomes our duty not only to treat the cause of the disease but, as far as possible, to ameliorate or modify its symptoms so that they will not give annoyance to the patient or do him actual damage. The profession of medicine has just passed through an epoch in which many of its ablest leaders strongly insisted that fever was a distinctly harmful process, always to be combatted, even when in a mild form; and forcible pictures have been drawn of the grave pathological changes which resulted in tissues

¹ Paper read before the Berks Co. Medical Society.

which had been exposed to temperatures very little above those which are associated with normal conditions. For this reason, antipyretic measures of all sorts and kinds have been resorted to within the memory of almost every hearer present, and much of the seeking after antipyretic drugs has been aided by the advertisements which have been distributed by the manufacturers of the various coal-tar products which possess the peculiar power of lowering abnormal bodily temperatures.

In other words, the position of the profession has been to go to the extreme from that which was held by their forefathers; for it is not to be forgotten that for many years a certain number of physicians at least regarded fever not only as a harmless but as an actual protective process, devised by nature to aid the patient in his struggle against his ailment; and as long ago as the time of Hippocrates that individual expressed the belief that fever was a protective process. It seems to me that our guide in regard to fever should be a rule similar to that which the careful physician follows in the treatment of any disease or important symptom, namely, the rule of moderation; or, in other words, that he shall consider fever as being by no means a distinctly harmful process until it becomes excessive and capable of doing actual damage by raising the temperature of the tissues dangerously near that at which coagulation of their protoplasm takes place.

As a rule in medicine, as in everything else, the skillful physician will not follow the claims of those who, on the one hand, assure us that all fever is evil; or, on the other hand, that fever is harmless; but he will follow the middle path, in which he will recognize that sometimes it is harmless and sometimes it is capable of doing great damage. The occasions on which it is harmless will be those in which the temperature does not exceed $102\frac{1}{2}^{\circ}$ or 103° at the most; and those in which it is harmful will be those on which it runs from 103° to 105° . It is also to be remembered that the duration of the fever and the character of its cause seriously modifies the question as to whether its existence is dangerous to the patient, for we can readily understand that a patient with a fever of 102° or 103° , continued for three or four weeks, as it is in typhoid, might in the end receive injury; whereas a patient with a temperature of 104° or 105° , during some acute ailment which only lasts a few hours or a few days, could stand this hyperpyrexia without material damage. I therefore can express the views which I wish to bring before you to-day in three propositions:

First, that fever when excessive or prolonged is harmful.

Second, that moderate fever, not too prolonged, may be of distinct advantage to the patient.

Third, that moderate fever, not too prolonged, even if it is not advantageous, may be, on the other hand, not deleterious; but may be regarded by the physician without any anxiety as a characteristic concomitant symptom which we would naturally expect to find in a patient suffering from the disease which is present in the patient's system.

I shall not devote myself to the consideration of the ways in which excessive or prolonged fever is capable of doing harm to the tissues of the body, I shall merely state in passing, and for the purpose of promoting the discussion, which I understand is to follow my paper, my firm belief in the fact that the application of cold water, the temperature varying with the necessities of the case, is by long odds the most efficient means that we have for reducing temperatures which we believe to be harmful to our patients; whether these temperatures be hyperpyrexia of acute illnesses, or whether they be manifestations of more prolonged maladies; and, secondly, I desire to emphasize a point which I believe is too frequently ignored in the use of cold water in the treatment of fevers, namely, the necessity of always resorting to active rubbing or friction of the body and extremities of the patient, while cold water is being employed, for the double purpose of maintaining the circulation by equalizing it and of bringing the hot blood to the surface so that it may be cooled, for, as we all know, the application of cold to the surface of the body causes contraction of the peripheral capillaries and the congestion of the internal viscera, where it is impossible for the cold applications to the surface to materially reduce the temperature. These cold applications do good not only by abstracting heat from the body, but they also do good by improving the nervous tone of the patient, and, what is very much more important, they improve the tone of his vascular system, the friction preventing any tendency to congestion or stasis in important organs, such as the liver, lungs and kidneys. In the ordinary infectious diseases with high fever the vascular system too often becomes disorganized and lacking in elasticity, just as a hollow rubber ball will become brittle and inelastic if kept motionless for a long period of time; whereas, if the rubber is exercised each day, by squeezing it in the hand, it will maintain its elasticity indefinitely. By means of the cold bath, or sponging, the blood vessels have their elasticity maintained and the circulatory apparatus is therefore kept in good condition. Some of you may have seen a paper which I published some two years ago, entitled, "The Vaso-motor System as a Factor in Disease," in which I emphasized the fact that the condition of the blood-vessels and their nerve supply is as important to life as is the condition of the heart.

That mere high temperature is not always a harmful agent has been proved again and again, not only in clinical medicine, but in the experimental laboratory. The experiments of Welch in America and Naunyn in Europe show that animals can bear temperatures artificially induced which far exceed the normal, provided there be no additional strain thrown upon the organism by an infectious process, and I would like to present the following views as supporting the theory that in some instances fever is actually a protective process.

First, fever is a condition developed in all healthy animals as soon as they undertake, as do all healthy animals, to resist infection; and while

it may be urged that it is a coincident symptom, this hardly seems probable in view of its importance, for nature would hardly devise a plan for vital resistance handicapped by such an important phenomenon if it were useless in itself. This is supported by the following: Two animals which received sufficiently large doses of germs or toxins to cause their death beyond all doubt, developed very little fever or none at all; whereas other animals who received smaller doses of the infectious disease, so to speak, speedily developed fever and survived, although if the same dose of infection be given and fever be prevented by artificial means, they die as promptly as if a larger dose were used; and, finally, it is interesting to note that, when an animal is immunized by repeated doses of toxic material, it has a febrile movement with each dose until it is completely immune, when the fever ceases, having decreased at each dose, owing to the increasing immunity.

As I have been limited to the space of about twenty minutes, I shall not weary you by adducing a large amount of clinical and other research which supports these views, but will refer you to a paper which I wrote upon the "Role of Fever in the Modification of Disease," which was published in *The Therapeutic Gazette* for February, 1896, in which I think I adduced sufficient evidence to indicate that fever is often a distinctly protective process, designed by nature to aid the animal or man in accomplishing his recovery.

It is interesting to note, too, that all the glands in the body which recent investigation has seemed to prove to have the function of destroying toxins by developing leucocytes, or destroying germs, have their activities materially increased by moderate rises in bodily heat, and that fever in some instances, at least, is distinctly unfavorable to the growth of germs or the manufacture of toxic materials by them. Having mentioned the fact that, in my belief, fever is in a certain number of cases useful, and that where it ought to be reduced the application of cold is our best method for so doing, I now wish to pass on to a brief consideration of the reasons why we should not employ antipyretic drugs to combat febrile movement.

First, let me point out to you that nature has four methods for the protection of the body in disease: First, the elimination of poison by the emunctories; second, the development of antitoxic material by glands and other tissues; third, the production of fever to stimulate and support the system; fourth, the result of increased glandular activity by means of which a large number of leucocytes are set free which speedily attack and destroy the infecting micro-organisms of disease. Antipyretic drugs not only remove the fever and in some instances thereby remove a protective process, but at the same time they depress the nervous centres governing heat processes, increase the work of the emunctories, already loaded down in the efforts to eliminate heat from the body, and also prevent the development of leucocytes, as a result of which the germs are destroyed in the body and perhaps the antitoxins are formed.

It is evident, therefore, that antipyretic drugs, as a rule, combat most, if not all, of the protective measures designed by nature in the presence of the infectious diseases; whereas, on the other hand, the cold bath, while relieving the fever if it is excessive, in no way modifies any of these protective efforts, but, on the other hand, actually increases their activity, for it increases oxidation, and by this means probably aids in the combustion or oxidation of a certain amount of toxic material. It stimulates the glandular system, greatly increasing the quantity of hemoglobin and the red and white cells. The cold bath, therefore, has a physiological action far greater than the withdrawal of heat, which is a minor and side issue.

Nine years ago, when the entire profession were far more interested in the employment of antipyretic drugs than they are to-day, in an essay upon "Fever and Antipyretics" (to which was awarded the Boylston Prize of Harvard University), I said, speaking of antipyrin, "This drug, even though its influence may be most favorable in a given case, still accomplishes nothing in the way of cure. It only governs the heat processes while the disease ploughs its way onward to recovery or death, although it may, by quieting restlessness due to the fever, or the nervous disorder produced by the disease, render the pathway to recovery more easy, but no shorter than if it were not employed. Many physicians have looked, and still look, upon antipyretic treatment as curative in its effects, but nothing can be more distant from the truth."

I reiterated these views, with full confidence in them, in a paper entitled "The Role of Fever in the Modification of Disease," which I have already mentioned, written four years ago, and I still have confidence in the correctness of the views first advanced nine years ago. I have not dwelt upon the minor points in the treatment of fever in this paper, because I have been informed that I am simply to open a discussion, which I hope will be taken part in by most of the members present, and, if opportunity arises after they have discussed the practical side of this matter, I shall, if it seems appropriate, say something further in regard to the treatment of fever when it becomes my duty to close the discussion.

Payment for Abortion Advertisements not Recoverable. It is gratifying to learn (*Med. Press and Circ.*, Apr. 5, 1899) that the City of London Court has decided that a newspaper cannot recover the charge for inserting these pernicious advertisements. "The *Weekly Dispatch* sued an advertising agency for £4 10s. for publishing such announcements, and the agency pleaded that as the advertisements were *contra bonos mores* the amount could not be recovered. Mr. Registrar Wild, who heard the case, agreed to this, and refused to give a decree, but also refused to give the agency its costs."

IMMUNITY AND THE USE OF NORMAL NON-IMMUNIZED SERUMS.

A Refutation of Certain Erroneous Views Upon the Subject.

BY JOSEPH MCFARLAND, M.D.,

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It is almost certain that resistance to, and recovery from, disease depends upon varying physiological phenomena, and that the various explanatory theories all contain elements of truth. Without doubt, many bacteria meet their fate in the circulating blood stream; it seems to have been pretty clearly determined that some are destroyed by phagocytes; every one who has done the simplest experiments with the antitoxins is satisfied that they play a most important role, and the most recently advanced theory of Emmerich and Löw takes us back to the original "Retention theory" of Chaveau by supposing that the retained metabolic products of bacterial energy act as enzymes by which the bacteria producing them are dissolved.

In the present status of knowledge, it is the greatest error to dogmatize upon any one method by which the animal organism defends itself against its foes. It should never be forgotten that immunity and susceptibility are relative terms, and that they are often dependent upon accidental conditions. Thus, it is commonly stated that birds are exempt from anthrax, and inoculation under ordinary conditions fails to injure them; but Pasteur showed that, by proper manipulation, as by plunging them into cold baths after inoculation, their resistance could be destroyed. Reptiles and batrachians are also thought to be exempt from tuberculosis and anthrax; yet when, after inoculation, they are kept at a temperature about equal to that of the human body, they may succumb to these diseases. Roger's classic experiment of compelling a rat to turn a revolving wheel until exhausted, then inoculating it with anthrax and producing fatal infection, is almost too well-known to need mention. The influence of food upon vital resistance has also been studied, and it is well known that animals are more resistant upon one kind of food than upon others, and especially unnatural foods. Combinations or symbioses of different kinds of bacteria may be followed by most unusual results, and in my own laboratory Dr. W. Wayne Babcock has successfully infected brown and white rats supposed to be immune from anthrax by the associated introduction of a culture of bacillus prodigiosus. The effects of various "vaccinations" are extremely significant in this connection, and illustrate how changed the animal body must become when, from a dose of prepared vaccine it obtains the power of successfully resisting a fatal infection. This is well illustrated in the case of the vaccines against "Black-leg," the cattle disease of the West. In preparing these vaccines, I use a culture of the black-leg bacillus, which is fatal to guinea-pigs in twenty-four hours. When passed from guinea-pig

to guinea-pig rapidly for a few generations it becomes virulent enough to kill a calf. The muscles of the infected areas in the calf are then cut out, chipped, dried and pulverized. A little of this powder, mixed up with water, is fatal to another calf in eighteen to twenty-four hours. If, however, the dried and pulverized muscle is heated to 90°C. for some hours, it undergoes an attenuation, so that, while it will still fatally infect guinea-pigs, it will not so infect a calf, and when inoculated into a calf produces a very slight reaction, followed by perfect resistance to the most virulent culture it is possible to secure.

The vaccination against small-pox is too well known to need mention. I am therefore led to another very important and very much overlooked fact about immunity, viz., the influence which variations in the bacterium can occasion. Let me illustrate this by a reference to the well-known vaccines against anthrax. If a virulent anthrax bacillus be secured from a cattle epidemic, it will be found to cause a rapidly fatal infection in white mice, guinea-pigs, rabbits, sheep, cattle, hogs, horses, etc. "Pasteur pointed out, and every one who experiments in bacteriology has confirmed his observation, that by causing this virulent bacillus to grow at an unusually high temperature (40° to 42° C.) it can be robbed of its pathogenesis to a greater or less extent, according to the duration of the exposure. It is thus possible to produce bacilli which will kill mice but not guinea-pigs; mice and guinea-pigs but not rabbits; mice, guinea-pigs and rabbits but not sheep; etc. In nature it is very probable that anthrax and other pathogenic bacteria become attenuated in their disease-producing capacity by exposure to sunlight, oxygen, high solar temperature, etc., so that there are varying grades of virulence at different times, and in different places. This is a partial explanation of the well-known phenomenon that the infectious diseases vary in malignancy in different epidemics.

The remarkable part of the anthrax attenuation is, however, observed in the effect following inoculation of the varying grades of bacilli. If, for example, I inoculate a perfectly healthy cow with anthrax bacilli fatal for mice but not for guinea-pigs, no important effect is noted; if I follow this by an inoculation of bacilli fatal for guinea-pigs but not for rabbits, nothing of importance takes place, but after these preliminary injections I find that the cow has become so changed that what would have been a certainly fatal infection in an unprotected cow is now harmless. From these facts it must be very evident that there are accidents of infection which may be beneficial or disastrous according to their kind.

I have thus illustrated (1) that there is no absolute immunity, but that (2) natural and unnatural conditions of temperature, diet, etc., affect it. (3) Symbiosis of bacteria greatly affect it. (4) Modifications of the virulence of the bacteria greatly affect it.

I never think of this subject without recalling the very clear remark of Fraenkel: "A mouse may be immune from a quantity of disease germs

naturally fatal for a mouse, but not necessarily immune from a quantity fatal for an elephant."

With these well-grounded principles of infection before us, I wish next to pass to a most erroneous and pernicious theory that the blood of the *normal animal* is, and must be, the secret of successful therapeutics of the infectious disease. This idea must originate from a hopeless ignorance of the facts which have been clearly demonstrated during the last decade. It presupposes several untrue hypotheses:

- (1) That the blood of a naturally immune animal is selected for use.
- (2) That this blood acts destructively upon the bacteria of that disease for the treatment of which it is employed.
- (3) That the success of the treatment depends upon the destruction of the disease germs.
- (4) That the normal serum is identical in properties with the immunized serum.

Taking up these hypotheses in order, I will endeavor to refute them upon purely scientific grounds, leaving my reader to judge for himself what practical application is to be made:

(1) *The blood of a naturally immune animal is selected for use in antitoxic therapy.* I have already partly attacked this error in pointing out the relativity of susceptibility. The chief consideration in the selection of the animal to be used is the amount of serum it can furnish. An experimental research that will take months is poorly repaid if the animal treated furnishes only a thimbleful of blood. When the serum made is to supply thousands with therapeutic doses it must be made by the gallon; therefore the largest available animal—the horse—is selected. That the horse does not suffer from spontaneous diphtheria seems to be pretty well established; but that horses are susceptible to diphtheria is shown by the fact that, in my own experience, at least half a dozen horses have succumbed to doses of 1 c.c. of strong diphtheria toxin—less than $\frac{1}{500}$ of the usual amount endured by the horse at the end of his immunization. The horse is one of the most susceptible animals to tetanus, dying from the accidental inoculations it receives with great frequency, yet the horse is the animal selected for treatment, and when properly immunized furnishes serum of almost inconceivable antitoxic potency.

The antitoxin formation depends upon an extreme intensification of the natural resistance brought about by purely artificial means. Under no natural conditions, now known, can such a blood condition develop.

(2) *The blood of the naturally immune animal acts destructively upon the bacteria of that disease for the treatment of which it is employed.* Here, again, we have anticipated what is to be said. The horse is highly susceptible to tetanus, the tetanus antitoxin is made by the horse, yet neither the normal horse's blood, nor the immunized horse's serum acts destructively upon tetanus bacilli. The blood of neither the normal nor immunized horse acts destructively upon diphtheria bacilli.

In the classic experiments of Büchner and Nuttall, to which reference has been made by Dr. Parker in a recent article upon this subject,¹ the irreconcilable paradox was observed that anthrax bacilli put into the rabbit's blood in the rabbit's body killed the rabbit of anthrax, while anthrax bacilli put into rabbit's blood out of the rabbit's body were themselves killed. Evidently, in the coagulating of freshly drawn blood some change takes place, and drawn blood is not physiologic blood.

It is also a fact, apparently not known to Dr. Parker, that this germicidal property of the blood serum is of very temporary duration and disappears upon keeping the serum. It is clearly something *in* the blood and *not normal to it* that is responsible for its antitoxic operations.

(3) *The success of antitoxic treatment depends upon the destruction of the disease germs.* In the preceding paragraph, I pointed out that it cannot be experimentally shown that any of the antitoxic serums possess germicidal properties beyond those of normal blood.

The term *antitoxic* serum indicates that the office of the serum is to *combat toxins*, not to kill germs. Antitoxic serums have nothing to do with the disease-producing germs, except that by them the toxin used for immunizing the animal employed is produced. The experiments of Ehrlich and Calmette show that antitoxic serum of great potency can be prepared with ricin, abrin and snake venom. The operation of these is subject to immediate visible proof. For example, when I inject serpent's venom into the ear vein of a rabbit it dies in a few minutes; but if, at the same time or previously, I inject a couple of cubic centimeters of the serum of a highly immunized horse (by the way, horses are so susceptible to rattle-snake venom that I have killed them with 0.01 grm. of dried venom), no effect is produced.

The operation of the antitoxic serum is chiefly, if not solely, through the destruction of the poisonous products of the germs, not of the germs themselves.

(4) *That normal serum is identical with antitoxic serum.* That any one should hold this view simply asserts that he lacks information; for, of the facts I have mentioned, there is none more easily susceptible of demonstration. I observe that those who profess skepticism upon serotherapy (as ordinarily meant) usually entirely forget that in the laboratories where antitoxins are manufactured, and where multitudes of observations are made upon them, thousands of animal tests are made in order to determine that the serums offered for sale possess the very virtue that Dr. Parker concludes they lack. If there is a proof which should convince every prejudiced, as well as unprejudiced mind, it is the test formulated by Behring and Ehrlich. Very briefly stated it is:

(a) Find the least certainly fatal dose of toxin for a guinea-pig.

¹ "Concerning Immunity and the Use of Normal Non-Immunized Serums," INTERNATIONAL MEDICAL MAGAZINE, June, 1899.

(b) Give the guinea-pig *ten times* this certainly fatal dose of toxin, and varying quantities of the antitoxic serum, until the least quantity that will protect against the poison is found.

(c) Express the required dose as a fraction of a cubic centimeter, multiply it by ten, and the result will be the number of units per cubic centimeter.

EXAMPLE.—0.01 c.c. of diphtheria toxin is the least certainly fatal dose for a guinea-pig. Several guinea-pigs are injected with ten times this dose or 0.1 c.c. and $\frac{1}{1000}$, $\frac{1}{2000}$, $\frac{1}{3000}$ and $\frac{1}{5000}$ c.c. of the antitoxic serum respectively. All die but the first— $\frac{1}{1000} \times 10 = \frac{1}{100}$ —the serum contains 100 units of antitoxin per cubic centimeter. In this same manner are tested all of the antitoxic serums and *the contrast between the normal blood serum, which very rarely contains any protective substance at all, and the best serums which contain 1,000 units per c.c. is immense!*

That the antitoxin is something *added to the blood* and not normally present in it, as Dr. Flemming is quoted by Dr. Parker as saying, is proved by the very argument which is adduced to disprove it. It is a substance which readily disappears from the blood of the immunized animal and from the therapeutically treated individual, being eliminated in every excretion. The length of time it is retained varies, and is never longer than a few months, usually probably about four or six weeks. I perfectly agree with Dr. Parker that "There is nothing to disprove that this so-called antitoxin serum is not either a concentrated solution of normal resisting fluid or an irritant which acts by stimulating the normal glandular system."

I do not attempt to say what the antitoxins are. I do not know, and no one at present claims to understand them. There are various theories: (1) That the antitoxin is the toxin in a changed condition, that it undergoes some kind of an oxidation in the system similar to that observed by Charrin and D'Arsonval and Bolton and Pease in the process of electrolysis by which they changed toxin into antitoxin in the test-tube; (2) that it is a vital product of cellular energy brought about by the stimulation afforded by the toxin; (3) that it is a ferment exciting a great antitoxin production in the body; (4) that it is a quantity of bacteriolytic enzyme which has collected in the blood of the horse in the process of immunization.

"Normal serum is antagonistic to all toxins" (!) only in that it dilutes them, and hastens their elimination. That this declaration is absurdly untrue, is sufficiently illustrated by the fact that thousands of people are dying every day from the presence in their blood of the toxins of the specific infectious diseases, in spite of their ten to twenty pounds of normal serum.

Five Successful Pylorectomies. At a recent meeting of the Clinical Society, London, Morison showed 5 cases upon which he had performed pylorectomy for malignant disease. The patients were free from signs of recurrence or metastasis, although more than 18 months had elapsed since the operation in any case.

LECTURE.

*A CASE OF ARTHRITIS DEFORMANS OF THE HIP JOINT.*¹

BY CHARLES GREENE CUMSTON, M.D.,

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THE patient that I wish to show at our clinic to-day is sixty-one years of age, and by occupation a cook. As far as the family history goes, we find that the patient's mother and father died late in life, probably from old age, while one brother died of heart disease. There is one brother and two sisters alive, and the patient tells us that they are apparently healthy in every respect. The patient also says that she has never been seriously ill, and that the present complaint, for which she has consulted us, has now been present for over three years, but it was only noticed at first when she began to have trouble in walking, on account of a slight shortening of the left leg which appeared. The disease then became more pronounced, and little by little the patient was obliged to limp, on account of the pain present in the hip joint.

Examination of the patient shows that she is a well-developed and healthy-looking person for her years. Examination of the heart and lungs reveals nothing abnormal, and the urine is free from pathological elements. The left leg is about three centimeters shorter than the right leg, and the point of the greater trochanter is found above the Roser-Nelaton line. I have never been able to find any pathologic change in the anterior or external surface of the femoral joint; but when the patient was examined under ether, we found that there was an almost entire absence of inward rotation, very considerable decrease in abduction, and a considerable restriction of flexion, while outward rotation, as well as adduction, was apparently quite free. These phenomena of imperfect movements led us to hesitate between a diagnosis of coxa vara, an impacted fracture of the neck of the femur, and arthritis deformans. But the possibility of a tubercular coxitis being present is only small if we consider that there is absence of any of the anomalies in the position of the limb, such as are characteristic and always present in the case of coxitis as well as the free and unrestricted outward rotation. An impacted fracture of the neck of the femur can be immediately excluded, because the patient has not sustained any traumatism, and, still more, the patient has never had to take to her bed and has always been able to walk about, the present complaint having gradually developed, and without any known cause. Still, it must be admitted that the shortening of the leg and the restriction in the movement

¹ A clinical lecture delivered on April 20, 1899.

of inward rotation are symptoms that would indicate a fracture of the neck of the femur.

As to the treatment in this case, a dorsal pasteboard splint was applied, and afterward the limb was done up in a plaster of Paris dressing and then suspension and counter extension were employed. At the end of four weeks, the dressings were removed and passive movements of the limb were begun, and at the end of another week the patient was allowed to leave her bed and every day was given a hot bath.

Now, in considering this case, we must bear in mind that the disease has existed for three years and no traumatism is mentioned by the patient, her attention only being called to her affection on account of the pain in the femoral joint when she walked, and also because limping became more pronounced. On the other hand, examination of the patient shows that there is a shortening of the affected limb, an elevated position of the trochanter, a decrease in abduction, normal adduction, complete restriction of inward rotation, with an outward rotation nearly perfect.

The diagnosis of this case must, therefore, be differentiated from that of chronic hydrarthrosis, chronic arthritis, tubercular coxitis, coxa vara and arthritis deformans.

In the hydrarthrosis there follows an acute serous synovitis, or its course and commencement may be gradual. The principal causes of hydrarthrosis are various forms of traumatism, such as contusions and sprains, or it may follow the acute, infectious diseases, such as scarlet fever; or, on the other hand, it may follow gonorrheal infection of the joint. Now, in looking over the history of the case before you, there is nothing that would induce us to believe that the present affection was hydrarthrosis. The symptoms of hydrarthrosis are, firstly, a perfectly distinct fluctuation in the diseased joint, and pains with both active and passive movements; there is also a restriction of some of the movements of rotation.

If we now consider the chronic diseases of the femoral joint, we must first take up chronic arthritis. The course of this affection is either that it follows an acute rheumatism, or it may start from the beginning in a latent way and develop very gradually, but as a rule this disease does not limit itself to a single joint, and usually it will attack several. The patient will complain of dragging, burning pains, and will tell you that the movements are restricted more especially in the morning, and more painful than later on in the day. Suppuration, ulceration and necrosis of the bone is never met with, and a collection of synovial fluid is never present to any great extent. In the more serious cases, a more or less complete ankylosis will sooner or later occur.

When the joints of these patients are moved, a grating sound will be heard, which is due to the newly-formed connective tissue and to the roughening of the cartilage in the joint, and later on in the disease muscular atrophy will be found. I consequently think that we can exclude chronic arthritis in the present case, from the fact that only a single

joint is the site of any trouble, also from the fact that we have a shortening of the limb. We have before us some other disease of the hip joint.

Tubercular coxitis, which is also a chronic disease of the hip joint, presents three stages, the symptoms of which show themselves in a very similar manner to those in the case before us: aside from the primary stage of coxitis, where we have limping and pains in the femoral joint, we have the two other stages, in which fluctuation, abduction and outward rotation are apparent, or actual lengthening of the leg is present; or we may have adduction, inward rotation, flexion of the femoral joint and an apparent or real shortening of the limb. During the course of tubercular coxitis, the region of the hip joint will be found tumefied; owing to the inactivity of the movements of the joint, the muscles of the thigh and leg will become more and more atrophied. The pains in the joint may reach such a degree that standing up or walking may become impossible, and these unfortunate patients will be obliged to take to their beds. After a certain number of months or years, a spontaneous cure of the process in the joint may take place, and in some very rare instances recovery has been known to occur during the primary stage of the disease.

Now, although the affection present in our patient of this morning has developed in a chronic way, in order to exclude tubercular disease of the hip joint we have only to consider for a minute the history of our case. She has told us that she was subject to pains in the hip joint, especially in walking, and that a shortening of the limb, soon accompanied by limping, appeared. The shortening of the member was, however, not accompanied by any of the anomalies in the position of the limb so characteristic of tubercular coxitis.

A careful examination of the chest showed that there was no disease of the lungs, and consequently the possibility of the present affection being tubercular is most improbable, and we may exclude it.

Let us now consider another chronic affection of the hip joint, viz., coxa vara. The typical picture of a coxa vara is in many ways similar to our case of this morning. The pain in the affected joint, the gradually developing limp, the appearance of the disease without any cause, are present in both this patient and in coxa vara, but in most cases of the latter affection it is young people, from twelve to twenty years of age, that are most frequently the subjects attacked by it. When the disease has reached its height, the following symptoms will always be present, viz., there is adduction and inward rotation.

Hofmeister, who has probably collected the greatest number of cases of any one man, divided the cases of coxa vara as follows: Firstly, the patient presents a simple high position of the trochanter, consequently a shortening of the leg is present, limited adduction with restricted abduction; while, on the other hand, we find a perfectly free flexion and extension, as well as a perfectly free rotation; this group forms the smallest number of cases. In the second group we have a high position of the trochanter and

an outward rotation; flexion is free, at least when there is considerable outward rotation and extension; adduction is free, and so is outward rotation; but, on the other hand, we have a limited abduction, as well as inward rotation. In the case I have shown you, we find a diminution of the abduction, complete restriction of inward rotation and normal adduction; we also have a shortening of the limb, which, as I have shown you, in our case is due to a deformity of the condyle as well as to its slightly downward direction, which is abnormal; and, above all, the age of our patient certainly speaks against coxa vara, inasmuch as coxa vara usually begins at a time when there are rachitic changes in the bones, and in our case the disease has only been complained of in recent years. And, still more, in our case of to-day there is no abnormal backward growth of the neck of the femur, and also we have not the great outward rotation which in most cases is almost always present in coxa vara, while the two prominent symptoms of arthritis deformans, viz., a restriction of inward rotation and movements of abduction, are marked.

Now, taking all the symptoms into consideration, we may safely exclude coxa vara in our patient and, after this somewhat lengthy consideration of the differential diagnosis of the diseases of the hip joint already enumerated, as well as their symptoms, and, after having considered the reasons which have led us to presume that our patient is affected with one of the diseases already enumerated, we can, with certainty, make a diagnosis of arthritis deformans by exclusion.

We will now consider the pathological anatomy of arthritis deformans in some detail. From its name, you may all readily imagine what might be the characteristic changes occurring in the joint in arthritis deformans. In the first place, a highly chronic inflammatory process of the joint takes place, from which the shape and the entire anatomical structure of the joint suffers. The joint does not undergo a destruction and then obliteration, as is the rule in most diseases of the joint having a fungous character, and even if the disease reaches its highest point of development, the joint will retain a certain part of its mobility; but it is gradually deformed and all its parts undergo a pathologic change.

The disease occurs most usually in old or elderly people, and in most cases several joints are attacked, either simultaneously or one after the other. At no time during the affection is there any elevation of the temperature, and suppuration or necrosis of the bone never takes place, even if the affection continues for many years, and is on the increase all the time. A cure is absolutely impossible, and all that surgery can accomplish is to arrest the process to a certain extent.

Arthritis deformans is essentially a disease of old age, which begins, as a rule, with some actual cause, such as a traumatism, an infection, and more rarely spontaneously, and which, from a pathologic point of view, gives rise to first a process of degeneration in the cartilage of the bone, and, secondly, to hyperplasia of the bone. The pathologic changes of cartilage

and the capsule produce a gradual deformity in the joint, and cause disturbances in the movement of the affected articulation. If we examine a joint that had been the seat of an arthritis deformans for some time, we will find all the parts making up the articulation considerably altered.

First, regarding the changes in the bones, we will find that the condyle is flattened, so that its shape is very similar to a mushroom or a derby hat. At the same time, the position of the condyle in its relation to the diaphysis is frequently changed. The condyle looks as if it had been fastened to the bone in a bent or irregular manner, sometimes in a slanting direction or at other times laterally. The changes that take place in the femoral joint are very interesting and odd, but in spite of these queer deformities of the ends of the femur there remains, as a rule, a certain amount of regularity of the opposed articular surfaces, so that the functions of the joint, although rendered more difficult and impaired, are not entirely done away with. Pathologic changes that are just as important as those arising in the bone are to be observed in an articular cartilage. Histological processes that do occur are of the most varying types; they are partly of an active and partly of a passive character. Exuberant hyperplastic growth and ossification take place, while, on the other hand, fatty atrophy and a wearing away of the tissue will be present. The usual result is, however, that the cartilage to a more or less greater extent disappears, and at this place, which will gradually increase in circumference, the underlying bone is denuded, and in some instances almost completely bared. The intra-articular ligaments, such as the ligamentum teres and the ligamenta cruciata, as well as the intra-articular cartilage, disappear in the diseased joint on account of a fatty metamorphosis, and in some cases of long duration no trace of the ligaments can be discovered.

The joint capsules are thickened, and undergo a fibrous tissue change which roughens them on their surface, and the epithelial covering is lost. At the beginning of the affection the synovia is often increased in amount, but later on in the affection it is found in only a very limited degree. The villi of the joint are enlarged, both in length and breadth, and very numerous excrescences spring off from them and they are present in far greater numbers than in normal joints.

Arthritis deformans may attack any joint in the body, the small as well as the large. As to the frequency with which the joints are attacked, I would say that the knee is the most frequent site of the disease, and after this comes the hip, elbow, shoulder, fingers, the small joints in the foot, and, last of all, the vertebral column. We should also make a distinction between the poly-articular and the mono-articular forms of the affection.

The most frequent form of arthritis deformans is the poly-articular, and when this takes place almost all the joints of the body may be affected simultaneously or one after the other, or only two symmetrical joints may be the seat of the disease. The mono-articular form is in most cases due to traumatism; the most common being intra-articular fractures, or

fractures that penetrate into the articulation, and also contusions and sprains of the joint, especially if there has been a laceration or rupture of the important intra-articular ligaments.

The course of arthritis deformans is always a very chronic one, and the disease may last for many years, thirty or forty not being at all rare. In some cases, the disease may become arrested in its progress, but a cure will never occur when once the affection is well under way. Just as the deformed condyles which are deprived of their cartilage, or just as the thickened condyles can possibly return to their natural condition, an obliteration of the joint by a solid cicatricial tissue is also possible. To make a diagnosis of the affection is only possible when the disease is advanced to a certain extent, because before this years may have passed by before the symptoms become those of a chronic arthritic, without suppuration, fever, or any detriment to the general health of the patient.

As the joint symptoms of this disease are essentially the same, I will only mention those which occur in arthritis deformans of the femoral joint. In the beginning of the disease the patient will tell you that he has pain, and that there is a restriction in the movements of the joint, which is more marked in the morning just after the patient has gotten up. Gradually a restriction of the extreme movements set in, and very frequently adduction and abduction are the most impeded, a symptom which may be traced back to the chronic inflammation of the joint, as well as to the retrogressive and progressive changes taking place in the condyle. Very soon after this, pains will occur while the patient is walking, and by moving the joint with one hand placed over it a distinct crackling will be felt. As the disease progresses every motion of the limb becomes more difficult, and flexion is also hindered, and at this point we may almost always find a change in the shape of the joint, which is felt as a hard tumefaction in the region of the neck of the femur, and also a change in the length of the bone, owing to the anatomical lesions, more especially an atrophy of the head of the bone. Tumefaction is usually due to an exuberant growth of the cartilage. Now, if the condyle begins to undergo atrophy, and if, therefore, the newly formed and deformed condyle recedes more and more on the neck of the femur toward the small trochanter, we naturally will get a shortening of the limb. The protrusion of the trochanter over the edge of the ischium is produced by a widening of the glenoid cavity outward and backward. The shortening of the limb may be as much as two or three centimeters, and the foot will usually be found in a slight outward rotation. And last of all, when the disease has reached its utmost limit, the joint becomes entirely fixed and then the pathologic process reaches its end.

If we now briefly sum up the characteristics of arthritis deformans of the femoral joint and compare them with the symptoms such as we find in our patient, we find that the pathological aspect of the case entirely fits in with them. The slow development of the disease, with pains only in the limb affected; then limping, which was soon followed by a gradual shorten-

ing of the extremity; of the limited restriction of inward rotation and abduction; the elevated position of the trochanter, the age of the patient—all this, gentlemen, would suggest that we have before us a typical case of arthritis deformans of the femoral joint, and that, by examination and consideration of the case, any other chronic affection of the joint may be excluded without a shade of doubt.

As to the operative treatment of arthritis deformans, I would say Volkmann was the first who advocated surgical measures for the disease, and he proposed to operate in cases where the shoulder and elbow joints were the seat of the affection, but to abstain from surgical operation in cases of the knee and hip joint on account of the general dangers which are connected with resection of these joints. Other contributions on the question of operative treatment were given by Zesar, Cornils and Mueller. In Mueller's operations he was able to abolish the pains with which the patient was affected, and no recurrence took place. The improvement in the functions of the joints may be considered on the whole as very good.

Mueller has reported three cases of resection of the shoulder joints of arthritis deformans, and, generally speaking, it may be said that operation is quite justifiable, even if an essential improvement in the function of the joint is but small, as by operation the patient is very sure to get much relief.

The non-operative treatment of arthritis deformans, which will only be effectual when applied during the early stages of the disease, consists in hydropathic cures, especially at the sulphur and alkaline springs. The patients should be especially instructed not to stop movements in the hip joints if they do not wish to have an increase in the stiffness of the articulation. If the pains which are so troublesome in the advanced stage of the affection have disappeared by an immobilization of the hip joint, the treatment should be followed up by massage and Swedish movements. Climate is also of considerable value, and patients derive much benefit from a season in the South. You should never neglect the exhibition of tonics and general tonic measures.

In the case which I have shown you to-day, improvement in the pains and in the general condition of the joint have taken place after the treatment above described, but the patient will be kept under observation, in order that we may treat any further symptoms which may arise.

Strictly speaking, in considering the diagnosis of this case, coxa vara and arthritis deformans were really the only two diseases which should have received our strict consideration, but I have mentioned the other chronic diseases of the hip joint in order to be more complete. The absence in the history of two important symptoms, viz., the want of any abnormal curve in the neck of the femur, and the considerable outward rotation, which generally are present in cases of coxa vara, were of decided importance when making the differential diagnosis in the present case.

TALKS TO GENERAL PRACTITIONERS.

THE TREATMENT OF ECZEMA.

BY JAY F. SCHAMBERG, A.B., M.D.,

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IT HAS been truly said that he who knows how to correctly diagnose eczema knows the subject of dermatology. Aside from the fact that this disease constitutes one-third of all skin affections, it is of importance because of the protean character of its manifestations.

And equally true is the remark that he who knows how to correctly treat eczema knows the treatment of all skin diseases.

Eczema is not a disease with a single specific cause: It is, when of constitutional origin, the result of chemical and vital changes in the blood, which are in turn dependent upon disturbances and diseases of the various organs and tissues. Among the causes of eczema, we find: Disorders of the alimentary canal (including constipation, dyspepsia, and auto-intoxications), functional and organic nerve affections, rheumatism, the uric-acid diathesis, Bright's disease, diabetes, diseases of the uterus and appendages, scrofula, dentition, etc. When of local origin, eczema is the result of the continued action of an irritant, either chemical, thermal, or mechanical.

You will not then be surprised to hear that there are no specifics in the treatment of eczema. Internal treatment must be based upon broad general principles. The first therapeutic endeavor should be directed toward the removal of the cause. This, however, is not always easy to ascertain.

In all extensive eczemas the diet should receive careful attention. Such articles as salted meats, pork, shell-fish, sugars, pastries, confections, pickles, sauces, condiments, cheese, and excess of starchy foods should be assiduously avoided. Tea and coffee should be reduced to a minimum, and alcoholic beverages entirely prohibited.

It is a matter of the greatest importance to keep the bowels in proper order. In acute eczema, it is desirable to inaugurate the treatment with free catharsis. This is best done by means of the salines, either alone or preceded by calomel.

A very useful preparation in the treatment of eczema, complicated by constipation and anemia, is the acid mixture of iron first used by Mr. Startin, of London. It combines the advantages of a laxative and tonic. It consists of

R Ferri sulphatis,	gr. xvi.
Magnesii sulphatis,	ʒi.
Acidi sulphurici dil.,	fʒi.
Aquae menthae piperitae, q.s. ad.	fʒiv.

M. S. fʒss. in half a tumbler of water before breakfast.

The saline waters, of which "Hunjadi Janos" is the best, are both efficient and convenient of administration. In infantile eczema, fractional doses of calomel are often followed by rapid improvement, even in cases in which constipation does not exist. Stomachic tonics and digestives are required in many cases of eczema. In patients suffering from atonic dyspepsia and constipation, the following prescription will be found of value:

R Tr. nucis vomicae,	f℥ss.
Acidi hydrochlorici dil.,	f℥ss.
Ext. cascarae sagradae fld.,	f℥i.
Tr. cardamomi comp., q.s. ad.	f℥i.

M. S. f℥i. in water after meals.

Diuretics are of value in acute and subacute eczema. The acetate, citrate and bicarbonate of potassium, in ten to twenty grain doses, may be given one half hour before meals, or the alkaline mineral waters may be employed.

Arsenic has but a limited field of usefulness in the treatment of eczema. It is of most value in the chronic papular and squamous varieties, and in the recurrent vesicular eczemas involving the fingers. It is contraindicated in acute eczema and whenever the degree of inflammation is high. In strumous individuals with glandular enlargements, cod-liver oil is a remedy of the greatest efficacy.

The local treatment of eczema is perhaps the more important in the majority of cases. The selection of remedies and their strengths must be governed by the grade of inflammatory reaction present. In an acute eczema the remedies cannot be too soothing. Too strong an application works immediate injury; too weak a remedy can do no worse than fail to do good.

Water is an irritant in all acute and subacute eczemas, and is to be used as infrequently as is compatible with cleanliness. It may be made less irritating by the addition of starch, bran or borax. In indolent chronic eczemas, soap and water are of therapeutic value. They are useful also at times to remove crusts in the acute varieties. It is, however, better to remove crusts by the process of softening. Pieces of flannel soaked in linseed or olive oil kept in contact with crusts for a few hours will soften and loosen them. If they are very adherent a luke-warm starch or flaxseed poultice may be applied. Pastes and salves should be removed from the skin by means of oily and unguentous substances. Petrolatum or olive oil, and not soap and water, should be used for this purpose.

At the onset of a vesicular eczema, dusting powders may be used with advantage. Many substances have been employed for this purpose—wheat starch, corn starch, rice flour, bismuth subnitrate, talcum, magnesium carbonate, zinc oxid, boric acid, kaolin, etc., etc. These may be used in varying combinations. The application of a dusting powder has a distinctly cooling and sedative influence upon an acutely inflamed skin.

Where moisture is copiously present, lotions will be found to be eminently useful. Under such conditions they are borne infinitely better than ointments. The simplest lotion is a saturated solution of boracic acid. This has been found to be just as soothing to the skin as it is to the mucous membranes. Sopped on every hour in acute eczema, it acts admirably in reducing inflammation. The calamin lotion is also a most efficacious application. It consists of

Pulv. calaminae,	
Pulv. zinci oxidi,	aa 3ii.
Glycerini,	f3i.
Aquae calcis, q.s. ad.	f3vi.

Powders held in suspension in a liquid have an admirable drying effect upon moist patches. After evaporation of the fluid takes place, the suspended powder dries upon the skin, and so the effect of a dusting powder is also obtained. When there is much itching, resorcin or carbolic acid may be added to the wash in the strength of five to ten minims to the ounce. With many dermatologists a favorite treatment for acute eczema is the use of black wash, either pure or diluted one half with lime-water, followed by the application of ordinary oxid of zinc ointment.

Soothing ointments are frequently employed in acute eczema. A good plan is to apply a lotion during the day, and a salve at night. Care should be taken to make the ointment weak and unirritating. One may use the ointment bases alone, such as petrolatum, cold cream, lanolin, oxid of zinc ointment, adeps, and such pastes as that devised by Lassar, which consists of one part each of oxid of zinc and starch to two parts of petrolatum; or some medicament, such as boracic acid or salicylic acid, may be incorporated in them.

A very old and efficient remedy in acute eczema is the diachylon ointment of Hebra. It must be freshly prepared, and should be applied upon strips of soft linen.

Subacute Eczema.—When the stage of acute inflammation has subsided, more stimulating applications may be used. Itching is a symptom which must be combatted. The most valuable antipruritics are carbolic acid, tar, menthol, and resorcin. Carbolic acid is the morphia of the skin. It is ordinarily applied in the strength of ten grains to the ounce, but this may be considerably increased. Other remedies frequently employed in subacute eczema are salicylic acid and calomel.

In chronic eczema strong applications are required to promote an absorption of the infiltrate. Here the tar preparations find their greatest field of usefulness. They are never to be used in acute eczema, and only with caution in the subacute forms. Tar is of great value in relieving the itching of obstinate papular eczemas. It may be incorporated in ointments, lotions or paints. The unguentum pix liquida, or the oil of cade, may be used with oxid of zinc ointment in the strength of one or two

drams to the ounce. It may also be incorporated in collodion in the same strength, and painted on the part.

I wish to call your attention to a very valuable preparation, which is known as liquor carbonis detergens. It is composed of mineral or coal tar and tincture of soap bark. In the strength of about two drams to four ounces of water it makes an extremely useful lotion in subacute eczemas.

In pustular eczemas the preparations of mercury, particularly the ammoniated mercury in the strength of ten to forty grains to the ounce, give admirable results.

For a squamous or horny eczema of the palms, nothing equals a ten to twenty-five per cent. plaster of salicylic acid.

In eczemas involving large areas of the body surface, baths are most grateful and beneficial. The usual baths employed are those containing starch, bran, marsh-mallow, gelatine, etc., or the alkaline bath made by adding a quarter of a pound of carbonate of soda or borax to the tub of water.

Whilst much depends upon the selection of the proper remedies and their proper strength, success will not be attained unless due attention is paid to the minutiae of treatment. The patient must be instructed how to apply remedies and how to remove them, and how to cleanse the skin and how not to cleanse it.

As in so many other things, attention to detail is the key-note of success.

THE ASEPSIS AND ANTISEPSIS OF MINOR OPERATIONS.

BY CHARLES L. LEONARD, M.D.,

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ALTHOUGH the vast majority of practitioners do not perform major operations, asepsis and antiseptics have as real a value in their work as in any other field. In fact, you will find that strict asepsis and antiseptics in minor operations, if carried out with proper care, would save in the aggregate more suffering and prevent more loss of valuable time to those who can least afford it, in minor surgical cases, than they do in major operations; although the effect on the mortality from operations would not be as marked.

The application of these principles in your minor surgery will be gratifying both to you and to your patients. Many cases of septic infection will be prevented; many badly injured fingers and toes, that would otherwise have been sacrificed, will be saved.

The different ways of producing asepsis and antiseptics were discussed in a previous talk. It was shown that antiseptics must always be the partner

of asepsis, and that in the perfect combination of the two is found the best method. In minor surgery, as in major surgery, the attention to aseptic details in operating is the key-note of success.

Antiseptics must be employed in all operations to cleanse the hands of the operator and his assistants and to render the field of operation as nearly sterile as tissues can be made. This is generally secured by washing the hands thoroughly in two changes of water, with a sterile scrub-brush and soap. The tincture of green soap is very useful for this purpose. The nails must be carefully cleaned, both beneath and in the spaces about them. The hands should then be washed in alcohol of good quality or refined benzine, to remove all fatty matter and permit the action of the antiseptic solutions that follow. These solutions are corrosive sublimate, the bichlorid of mercury in the strength of 1-1,000, or 1-40 carbolic acid. The hands should then be washed in sterile normal salt solution, and, if the strictest asepsis is to be maintained, they should be dried with a sterile towel and encased in sterilized rubber gloves. Solutions of this strength are seldom used for other purposes than for cleansing the skin, and if ever employed in abscess cavities or wounds they should be thoroughly washed out with sterile water or weaker solutions. The skin of the patient in the field of operation is prepared in a similar manner, a previous shaving having removed all hair. Where there is any probability of an infection of the hands having taken place, from a previous operation upon a septic patient, the use of a saturated solution of permanganate of potassium, followed by a saturated solution of oxalic acid, is of great value, as this agent apparently possesses a marked germicidal action through its oxidizing power. You will find these solutions of great value in cleansing old and badly infected wounds and ulcers, where a mass of unhealthy granulations and sloughing devitalized tissue makes a field for the development and propagation of bacteria and prevents the action upon the deeper tissues of the active antiseptic agents you employ. This is also one of the most valuable properties of the peroxid of hydrogen, although due care must be employed in its use and its injection into deep-seated abscess cavities avoided, unless a sufficient outlet is provided for the gases evolved. In such cases it must also be employed well diluted.

The field of operation after it has been carefully prepared is surrounded by sterilized towels, or in case of abscesses and infected wounds, by towels wrung out of a 1-2,000 bichlorid solution. The instruments, after being boiled, are placed in sterile water or in 1-100 carbolic solution. Silk sutures can be rendered aseptic by boiling, or, a better plan is to render them antiseptic by boiling them for ten minutes in a 1-2,000 bichlorid solution. This apparently does not interfere with their strength, yet it renders them antiseptic, thus preventing subsequent infection in handling and the formation of annoying stitch abscesses.

Sponges are readily made of gauze (cheese-cloth) or of absorbent cotton,

and may be either dry and sterile, in sterile water, or antiseptic, by being wrung out of a 1-2,000 bichlorid solution.

The difference in the use of asepsis and antiseptics during the operation depends entirely on whether the wound is previously infected or not. If suppuration is present, your object should be two-fold—to remove the source of infection and the collection of pus already present, removing so far as is possible, with curette and antiseptics, the infecting organisms and preventing by occlusive dressings the further infection from without, thus promoting rapid healing by granulation. Where the field of operation is free from infection, on the other hand, your objects should be, to prevent infection by aseptic technic in operating, to prevent subsequent infection by occlusive aseptic dressings, and to promote primary union by securing a dry wound and by refraining from the use of irritating antiseptic solutions, powders and dressings.

Numerous experimenters and operators have proved that the majority of antiseptic solutions, and, in fact, all that possess marked germicidal power, produce an irritation of the tissues that is detrimental to their vitality and retards the healing process. When you are obliged to use antiseptic solutions in infected wounds, it is well, in all cases in which it can be safely done, to thoroughly irrigate the wound with sterile water, washing away the irritating antiseptics, drying the wound with sterile sponges or gauze pads, and closing it without the employment of irritating antiseptic powders. In some cases such treatment, with provision for drainage, will be sufficient to secure not primary but a rapid secondary union. Such treatment is very useful in cases where the infection is not actively in evidence but is only suspected. Where, however, it is possible to obtain a dry aseptic wound, drainage should be avoided. Aseptic treatment will secure the best results wherever it can be employed; but where marked infection is present vigorous antiseptics is indicated. The subsequent dressings must be carried out with as rigorous antiseptics and asepsis as the original operation. The wound must be guarded from infection at all times.

The aseptic dressing consists of dry sterile gauze, fluffed to facilitate absorption, then folded sterile gauze, and the whole carefully covered by sterile absorbent cotton. This layer of cotton is of great importance, and should extend beyond the gauze dressing on all sides. Bacteria cannot pass through dry cotton; it therefore acts as a filter and prevents air impregnated with bacteria from reaching the wound during the active movements of the patient. This precaution is frequently overlooked by experienced operators, but should be carefully attended to in all cases. Whenever it is possible to be absolutely certain of the asepsis and dryness of a wound, sealing by a celloidin dressing, through which the wound can be readily observed, is probably the best and most efficient dressing that can be employed. Through it any inflammatory signs can be noted, while the careful observation of the temperature will determine whether the dressing has to be removed or not.

Antiseptic dressings are employed to aid in sterilizing infected wounds after operation and to render sterile the discharges that flow from such wounds. They are very efficient after operations where subsequent sloughing and discharge are expected, as after the opening of boils or felons. You will find that their employment, even in such minor cases, will render valuable service. Bichlorid of mercury in 1-2,000 or 1-4,000 solutions is the agent most frequently employed. Carbolic acid should never be used, as it is liable to produce gangrene, especially in the extremities. Gauze wrung out of a 1-2,000 bichlorid solution, and applied with dry gauze over it, forms a dry antiseptic dressing as the moisture evaporates. Where a more vigorous action is desired in an infected wound, the gauze is applied moist and covered with oiled silk, gutta-percha tissue or waxed paper. This wet bichlorid dressing retains its moisture and has a more penetrating and lasting antiseptic action. Where heat and moisture are essential to the breaking down and discharge of infected tissues these dressings are invaluable, or where a vigorous and continued antiseptic action is essential to the sterilization of a wound. On some skins these dressings will produce irritation. Sterile boric acid ointment will protect the skin from such irritation, or the antiseptic solution may be diluted. This should always be done in cases of infants and children. Antiseptic powders should be avoided wherever possible. Boric acid, though weak in its antiseptic power, is a good drying powder and has the valuable property of being non-irritating. Iodoform is, on the other hand, irritating and prevents primary union. Its antiseptic action is due to the liberation of the iodine it contains, and when it acts antiseptically it must have the irritant properties of iodine. Its efficiency cannot be denied, especially in cases of tubercular infection; but its employment should be avoided where asepsis will suffice and where primary union in a dry, unirritated wound is hoped for.

Sterile gauze is the best packing for wounds; it provides for the absorption of secretions and deprives the bacteria of the moisture they require for growth and activity.

The American Electro-Therapeutic Association will hold its 9th annual meeting at Washington, D. C., September 19, 20, 21, 1899. The president is Dr. F. B. Bishop; the committee of arrangements: Drs. D. Percy Hickling, chairman; Jos. Taber Johnson, G. Lloyd Magruder, Z. T. Sowers, Robert Reyburn, G. Betton Massey, Chas. R. Luce, Elmer Sothoron, Llewellyn Eliot, Clifton Mayfield. The committee not only promises many interesting scientific features but also a very pleasant social programme, including a reception by the President of the United States, an excursion to Mt. Vernon, Arlington and Alexandria—a buffet lunch to be served at Alexandria—an evening visit to the Congressional Library, to be viewed under electrical illumination, etc.

THE ETIOLOGY AND DIAGNOSIS OF CHRONIC STHENIC GASTRITIS. (ACID GASTRIC CATARRH.)

BY BOARDMAN REED, M.D.,
Philadelphia, Pa.

It may be considered as now established that there are at least two widely different types of chronic gastritis—the sthenic and the asthenic—those with an excessive secretion of HCl, and of the digestive ferments, and those with a deficiency or absence of the same. Further subdivisions have been made; and, in particular, there have been described an interstitial gastritis and an atrophic glandular gastritis; but the former may complicate any of the other varieties, and the latter is present in the terminal stage of most at least of the asthenic forms and exceptionally may occur at the end of the sthenic ones.

Chronic sthenic gastritis—acid gastric catarrh—was formerly always classified among the gastric neuroses, and still is by some authors, the accompanying inflammatory condition having been overlooked; but there is nothing neural about it except, possibly, its origin in a certain proportion of cases, and its disastrous effects upon the nervous system. Once established, it is one of the most constant, persistent, and even stubborn of gastric diseases. It affects chiefly persons of a nervous temperament, and the original nervousness of its victims is aggravated by the damaging effect which the excessively acid chyme has upon intestinal digestion, the gastric and intestinal mucous membrane and the peristalsis.

As to its etiology, the neuropathic constitution seems to be a decidedly predisposing factor, and since it occurs far more frequently among brain-workers than among those who work mainly with their muscles, there is probably ground for the opinion of Mathieu, and other French authors, that intellectual overwork may be one cause. Mathieu advises sexual rest in the treatment of the affection, and would therefore doubtless include excesses in venery among the predisposing causes. However this may be, it is suggestive that of the large number of cases of acid gastric catarrh that have been studied by me, the great majority have been in the persons of respectable widows, maiden ladies, continent widowers and bachelors, and married men of advanced years, in whom sexual desire has presumably outlived potency. In the minority there was usually a history of excessive mental or nervous strain, with irregular and rapid eating. It is probable, too, that the prevalent use of very highly seasoned foods and stimulating drinks, especially the sharper spices and condiments, as well as strong coffee and tea, by persons in whom the gastric secretion is always abundant enough without such irritants and in whom the nervous supply of the glandular apparatus, as well as the nervous system generally, is excessively

sensitive and hyper-excitable, must conduce to the over-action of the gastric glands and finally to proliferation of the glands themselves.

The symptoms alone will not, as a rule, enable you to make the diagnosis of sthenic gastritis. An analysis of the stomach contents after a test meal is always necessary before a positive decision can be reached. In the earlier stages, and even in fully developed cases, there are often no symptoms except those referred to the intestines or to the nervous system. Prominent among the latter is a disturbance of sleep which may amount to obstinate insomnia or, as is more common, only to an uneasy, restless sleep, with the habit of awakening entirely at a very early hour of the morning. A majority of patients who, while blessed with a sharp appetite and a craving for meats especially, are irritable and excitable and unable to sleep after four or five o'clock A.M., will be found to be suffering from hyperchlorhydria, with or without gastritis of the proliferative type. When the sleep is promptly helped by a teaspoonful dose of bicarbonate of soda taken at bedtime, it may be set down as reasonably certain that the cause of the trouble is hyperacidity of some kind, and very generally it is the form under consideration.

There is nearly always a high degree of nervous erethism, with at first much mental activity; but later there may be depression; also intestinal flatulence and often gastric flatus as well, and either constipation or diarrhea—generally at first constipation and later diarrhea alternating with constipation, though exceptionally the bowels may continue to act normally, even in an advanced stage of the disease. The appetite is usually good and is often excessive, though it may be deficient. Emaciation and pallor indicating anemia and failing nutrition always develop at some stage of the marked cases that are not arrested early. In a considerable proportion of the bad cases, there is a more or less severe burning pain, especially at the height of digestion, though it may come on at any time during the digestive period and last till the stomach empties itself either by vomiting or propulsion into the duodenum, unless relieved by alkalies or anodynes.

Spasm of the pylorus frequently results from the irritant action of the excessively acid gastric contents, with stagnation and retention of food and secondary dilatation of the stomach, just as it occurs in obstructive stenosis of the gastric outlet. Before its walls have weakened, there may be violent and excessively painful cramps of the stomach from the same cause.

Since salivary digestion is arrested very early in the stomach in this disease, there is likely to be a large amount of fermentation of the starchy foods. In decided cases this takes place not only in the stomach, but also in the small intestine, since the gastric contents continue acid after passing through the pylorus and thus inhibit the action of the pancreatic and intestinal juices which require an alkaline or at least a neutral medium.

The yeast fungi seem to thrive in spite of the largest percentage of HCl ever found in the gastric juice, and in all the typical cases of sthenic gas-

tritis that I have studied, the microscope has revealed myriads of them in every slide prepared with a drop of the stomach contents, especially if obtained toward the end of the digestive period.

The diagnosis of acid gastric catarrh is established by finding upon repeated analyses of the gastric contents obtained an hour after the Ewald test breakfast a large excess of free HCl—upward of .1 per cent.—along with a considerable secretion of mucus from the stomach itself. There may or not be also gastric ulcer present which, when it thus coexists, is probably always either a result or accidental complication, and never the cause of the hyperchlorhydria, though the contrary view has been advanced. Even a moderate percentage of free HCl—.06 to .1—if persistent and associated with a profuse secretion of mucus in the stomach and with the symptoms above described, would warrant the diagnosis of chronic acid gastritis, since in the other forms of gastric catarrh the proportion of free HCl is always much below the normal.

The diagnosis of sthenic gastritis in its simple form from the same complicated with round ulcer is not always possible, since the latter may exist without its usual typical symptoms. In the latter case, however, you would generally find a markedly abnormal sensitiveness to pressure somewhere over that portion of the stomach which extends below the ribs, most frequently in the middle line and near the sternum, as well as over a small spot to the left of the spine near the origin of the eleventh or twelfth ribs. There should be signs at times also of gastric hemorrhage (blood in vomit or stools) and the symptom of pain aggravated always by food, especially when in a solid form and still more if very coarse; but these may be wanting.

In uncomplicated acid gastric catarrh, without ulcer, vomiting is not common except in the worst cases, and there is never hematemesis; the pain is generally relieved by taking bland forms of albuminous food, such as milk or soft-boiled eggs, and often also by the ingestion of meat or even bread, while no foods afford any relief to the pains of ulcer and the coarser aliments nearly always aggravate such pains at once. Furthermore, the pain of acid gastric catarrh may be almost certainly relieved by full doses of alkalies, but not so that of gastric ulcer, whether accompanied or not by acid gastritis.

It would be a great achievement if, by means of ever so elaborate urinary analyses, we could certainly determine whether the stomach glands were secreting a normal proportion of HCl, or whether any departure from the normal in this respect was in the direction of excess or deficiency. Many able men have experimented in this field and Boas, in his "*Magenkrankheiten*," has discussed the results somewhat fully. These have not been very satisfactory. I have made a number of experiments in the same line, and my results were contradictory. It is probable, however, that eventually methods will be perfected by which approximately accurate conclusions as to the gastric secretion may be reached in this way.

Repeated analyses of the gastric contents in connection with the

symptoms will be sufficiently diagnostic, as a rule; but you may often find in the wash water after lavage fragments of the mucous membrane in which the microscope will reveal proliferation of the border and chief cells especially. In the older cases, many of the cells may be seen to have undergone granular and mucoid degeneration and vacuolation (Van Valzah and Nisbet). So much importance is placed upon the microscopic demonstration of these cases by Hemmeter that he advises snipping off a piece of the gastric mucous membrane by an instrument devised for the purpose, when a suitable specimen cannot otherwise be obtained.

In a subsequent talk, the treatment of this very prevalent and important form of chronic gastritis will be fully discussed.

SYPHILIS—SECONDARY AND TERTIARY SYMPTOMS.

BY J. D. THOMAS, M.D.,

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THE secondary stage of syphilis is the explosive, the active stage. Until this time the virus is being quietly, gradually but surely carried along the lymphatic system, in a direction from the chancre, and when it is finally discharged into the vascular system we have, as a rule, a rise of temperature (from 99° F. to 104° F.), a general eruption, sore throat, headache, and, a little later on, a loss of the hair, from fracture of the hair shaft near the scalp, mucous patches, bone pains, and an enlargement of all of the remaining lymphatic glands in the body. Before the period of eruption the blood remains free from the germs of the disease and is not contagious; not so, however, with the secretion from the chancre or the contents of the lymphatic canals and glands. With the above ensemble of symptoms in a patient, one may be sure that it is a case of syphilis; and, when sought for, a chancre will be found somewhere upon the body.

Another aid will be the character of the eruption. Although the first eruption is usually, in the main, a macular one, still some papules will be found on the scalp, a few on the body and some of these scaly—a polymorphous eruption—a condition found in no other eruptive disease. Again, if the eruption is a papular one at first we will find some pustules, some macules and some scaly papules. It matters not which syphilide appears first, there is *always some tendency to polymorphism*.

The eruption of the secondary stage involves the more superficial structure, such as the outer layers of the skin, the periosteum, etc., and does not leave scars. With the tertiary eruption it is different; here all the layers of the derma are, or may be, involved, as well as the osseous structures, and when absorption or ulceration takes place scarring is the result. The

secondary eruption is due to capillary dilation with more or less exudation at the areas of capillary dilatation. This probably takes place in all the tissues of the body, but the exudate is only sufficient in amount or extent to produce a general *malaise* and an interference with the general nutrition of the body, and if the case is not treated these congestions sometimes produce serious results, as is witnessed in the iris and the intense headache due to meningeal or arterial congestion. In the tertiary lesions we have those that tend to involve a greater amount of tissue, and instead of being general in their character they are circumscribed. We may have one testicle involved, a large patch of tubercular eruption may appear upon the face or arm, or a gumma upon the leg. When the deposit takes place in some of the arteries of the brain we have a limited paralysis, which paralysis indicates the portion of brain involved. The tertiary lesions occur in the tissues made vulnerable by the preceding secondary lesions. Tertiary syphilis, so-called, then, is a sequel of veritable syphilis, and is not contagious.

Modern syphilographers have adopted, with some modifications, the classification of Cazenave. This is much more logical than using such terms as syphilitic psoriasis, etc. It would be just as consistent to call the macular eruption syphilitic measles. I find the following a convenient method of tabulating the syphilides, viz.:

SYPHILIDES.

ERYTHEMA- TOUS	{	Macularform, Maculo-papularform.	PUSTULAR	{	Acneform, Variolaform, Impetigoform, Ecthymaform, Rupiaform,
PAPULAR	{	Lenticularform, Papulo-squamousform, Moist-papularform, Miliaryform.	TUBERCULAR	{	Tubercularform, Gummatousform.

BULLOUS.

The bracket at the right includes those syphilides that we may encounter in the late secondary period as well as in the tertiary period.

The bullous syphilide is seldom encountered in the adult, although I have seen such a case the present year, but occurs in the infant when the disease is inherited, and, while seldom recovered from, is not necessarily fatal, as I know from observation.

Surgeon-in-Chief to the Pope. Dr. Mazzoni, whose operation for the removal of a necrotic lipoma from Pope Leo XIII. has been widely told by the lay press, has been appointed by the Pope as his surgeon-in-chief.

CLINICAL REPORTS.

CASES OF ECLAMPSIA, ELEPHANTIASIS, NEURITIS, AND BRONCHIECTASIS.

BY L. SMIRNOW, M.D.,

New Britain, Conn.

I. *Eclampsia*. Mrs. X., aged about thirty, and pregnant, has had four children, two of whom are living. Previous pregnancies and labors were uneventful, though she always lived in poor circumstances and could not afford the proper care of her general health. I was called to relieve her of an attack of indigestion, as it was stated, and when I arrived at the house (about noon time) I found her suffering from headache, nausea, retching, heaviness in her chest, a "load in her stomach," and shortness of breath. There was no little restlessness and anxiety manifested by the patient, but having been informed of her eating, on the previous evening, a quantity of green vegetables and cold beef, and of her bowels being costive, I thought it the more necessary to administer an emetic and a rectal enema of about three quarts of water. This afforded her some relief, so I ordered another emetic given an hour later and a mustard paste applied over the epigastrium, and cautioned her husband to watch the case carefully and report at the earliest possible moment any unfavorable developments. No sample of her urine was then obtainable, so I took none for analysis, neither did I deem it necessary, for the symptoms were quite deceptive, as may be seen. At about three o'clock in the afternoon the woman commenced to have convulsions, yet the husband did not apparently think this a very unfavorable development, since he did not report it until nearly eight in the evening. Probably, as the poor often do, he thought he would wait and see if it did not pass by of itself, until he waited too long. I hastened to the house and found the patient in a true eclamptic seizure, clonic and tonic spasms alternating in rapid succession, with high temperature, a weak and rapid pulse, frequent and short respirations, fixed eyes, and other well-known symptoms. My prognosis was at once unfavorable, but I proceeded to do the only thing possible to offer some slight chance of recovery, the delivery of the fetus. It was then nearly nine o'clock, and getting things ready and aseptic, and sending for an assistant to administer chloroform, took nearly another hour, so that she was not relieved of her uterine contents till about ten o'clock in the evening. Convulsions continued, however; and, notwithstanding all efforts, she died at about two in the morning. The fetus (dead, of course) seemed of about seven months' gestation, although the husband said she was supposed to have been in her eighth month.

The case is remarkable for the short onset, severity of the symptoms, and rapidity of its course, on which account, I firmly believe, had delivery been

induced even that morning, when the symptoms first appeared, she would not have recovered.

II. *Elephantiasis*. A young lady, unmarried, aged about twenty-two, German parentage. Health good, but for a lymphedema of the lower limbs, thighs, hips and vulva, increasing their size to at least twice the natural. She had been treated by various men in various ways, without any beneficial results, until finally tight bandaging from the toes upward, and silver nitrate and the tincture of iodine applied as counter-irritants to different parts, gave her much relief and reduced the swelling to some extent. Extirpation of the labia majorae was decided upon, at which operation I had the pleasure of assisting. It was performed skillfully, the wounds healed by first intention, and the labia minora well assumed the place of those removed. But about a week later a febrile condition developed which reached to 102.5° and 103° F.; the heart's action was much impaired and the pulse rapid and weak. There was also effusion in the pleural cavities, impaired respiration as a consequence, loss of appetite and general depression; but, most remarkable of all, the joints, particularly the wrists and metacarpal and phalangeal ones, were red, tender, swollen, and filled with a purulent fluid that appeared in drops under the skin and was also obtained by tapping. A few days later the patient died of septicemia. In talking the case over, the attending surgeon thought the affection to be a generalized erysipelas. This, of course, was purely conjectural, the more so since the seat of operation presented not even a sign of inflammation. I suggested that it might be suppurative arthritis resulting from a latent arthritic condition, an acute attack of which she may have had some time ago, and which was now excited into action by the constitutional disturbance produced by the operation; and, also, that the effusion into the pleural cavities was probably produced by the absorption of the toxic material. Inquiring afterward of the patient's friends, the doctor found that about two years ago she had a wrist and one or two other joints similarly swollen and tender, but they had subsided shortly after.

III. *Neuritis*. This case, in my opinion, is worth recording on account of the obstinacy and progressiveness of its course. The patient is a robust man, about thirty-five years old, a Russian, and by occupation a tailor. In the autumn of 1895 he had a nodular swelling appear in the palm of his right hand, red and painful. He attributed it to his ironing and rinsing of wet cloths during his work; but, finding that it did not improve, he sought medical advice. I took it to be an inflammation of a peripheral palmar branch of the median nerve, as the pain radiated to the thumb and index fingers, and thought that with appropriate treatment it ought to subside. But, as he could not stop his work, and thus remove the real cause of his trouble, the prospects for recovery were somewhat less, and the prognosis was qualified accordingly. Heat in the shape of poultices, steam, and vaporization was for a long time faithfully applied, and nerve-tonics given in full doses, including nux vomica, strychnin, arsenic and

phosphorus. Analgesics and antineuralgics, particularly the salicylates and lithias, were given in large quantities, and also alteratives, mostly potassium iodid in the syrup of sarsaparilla, and cod-liver oil. Faradization was administered for a long time, while the list of local applications, from the blandest ointment to blisters and leeches, was too long even to be mentioned. Temporary improvements followed one or other of the treatments, but the disease soon augmented.

After a few months of such a course, I advised operative interference, either neurectasy or neurectomy, as might seem best. To this the patient would not submit, although his system was getting reduced and his strength waning. He sought the assistance, at different times, of over a score of other physicians, mostly in New Haven and in New York, among whom were some prominent men, but, strange to say, none of them, except Dr. Carmalt, of New Haven, diagnosed the case properly, but considered it to be one of rheumatism. This is, indeed, more strange, since by this time several other branches of the nerve became affected, and the disease took on the "ascending" character. In the forearm, over the median nerve, a tender swelling, red and warm, would occasionally appear and subside in a few days; the back of the hand at times presented the same symptoms, and occasionally he felt pain near the shoulder. Later the right arm improved, but the left one became similarly affected. He also had a touch of it in the right sciatic nerve, which, however, soon passed away. All this time he had been working at his trade, except at the height of these attacks, and even then to some extent when he had much to do, but had constant treatment, mainly now, however, against rheumatism. It goes without saying that he tried all the quack nostrums and panaceas he could lay his hands on, not a few amulets, a red band around his wrist, and some oil from a holy shrine. By my advice, and by that of others, he also used sulphur baths, salt-baths, and the like. Recently he came again under my care and, to my regret, what should have been tried first was tried last. I discontinued all remedies, internal and external, and ordered local applications of ice, or a freezing mixture, for fifteen minutes three times a day; and there was the charm of its action. The disease at once subsided, and so long as he makes the cold applications he is well; but, growing careless, he fails occasionally to carry out the directions and thus has slight relapses, for which reason I still advise him to have operative treatment.

IV. *Bronchiectasis.* I report here a case not only of a peculiar character but one exhibiting also what may be termed a therapeutic wonder. It is that of a woman, aged forty-six and born in Russia, who gives a history of traumatism of the chest received some twenty-four years ago. As a consequence, she was for several weeks confined to bed with lung-fever, but made a good recovery; not, however, without to the present time retaining a neuralgic pain on the right side, a little above the hepatic region, and a constant cough with expectoration. What she expectorates, however, is not ordinary mucus, but a fetid secretion, yellowish, semi-solid and occa-

sionally frothy, much like coagulated or solidified pus, and having a very offensive odor. It was this that embarrassed her most, as oftentimes, when she coughed and expectorated, people would be forced to leave the room on account of the odor, and this was of daily occurrence. Yet in all these four and twenty years that she had been treated for it, both in Russia and in this country, she obtained not the slightest relief. Physical examination revealed in the lower lobe of the right lung, just above the hepatic region, a localized area of dullness, almost the size of a circle of a two-inch radius, which gave all the physical signs of a circumscribed abscess. Vesicular breathing was entirely suppressed, and tactile fremitus and vocal resonance were wanting. Outside the borders of this area and throughout both lungs respiration was normal, and physical signs showed no defects, which must therefore exclude any possibility of the case having been putrid bronchitis. It must have been, then, a dilated, sacculated bronchus, as a sequel of the old inflammation, continually secreting the fetid mucus and pus—the condition known as bronchiectasis.

The treatment had to be entirely experimental, since no medicine had had any direct effect on the disease. I therefore prescribed a mixture containing 50 c.c. of peroxid of hydrogen, 10 c.c. of listerin, 2 c.c. of the oil of anise, and water enough to make 100 c.c., of which a teaspoonful was to be taken three times a day; hoping, against any possibility whatever, that the peroxid would in some way reach the seat of the trouble, and exert its germicidal power. But I have great reliance on the sulphate of codein in many kinds of coughs, and, although it would almost seem to be counter-indicated in this case, I ordered $\frac{1}{4}$ grain tablets of it to be taken four times a day. The result was instantaneous. For the first time in twenty-four years the patient knew what it was to be free from pain, or to be free from the cough and that horrible smell, or to be able to lie on her right side without any discomfort. The surprise was no less pleasing to me than to her, for, to be frank, I did not expect any results. Yet I told her that her complaint could not be completely cured, unless surgically treated. Later I varied the doses of the peroxid and added the aromatic spirits of ammonia, in various proportions, and gave expectorant mixtures, maltine, and the like, but soon found that it was the codein that did the work, as a few weeks after she stopped the use of it the cough would return, though never to such a degree as before. I therefore prescribed the codein in different ways, in solution, capsules, tablets, pills and powders, and then so regulated the doses and time of taking it, that she would not become used to the drug. The seat of the trouble being superficial and easily located, I advised the opening and draining of it, but the patient has done so well for nearly two years under the treatment that she is quite content.

It may be said that morphin might have done the very same thing; but, while I am not ready to concur in this, even if it could, it were not wise to administer it, for soon the treatment would prove worse than the disease; while codein could be her daily food, if need be, without causing any injury.

SELECTIONS.

REPORT OF A TRIPLET BIRTH, ONE SINGLE CHILD AND A WELL-DEFINED CASE OF THORACO-GASTRODIDYMUS.

BY G. W. THOMPSON, M.D.,
Winamac, Ind.

It affords me great pleasure to be able to present a correct photographic reproduction of the most wonderful monstrosity, perhaps, ever seen, a triplet birth with one single child and a well-defined case of Thoraco-Gastrodidymus—one perfectly formed body, with two heads, two necks, four arms

and hands, four legs and feet, in fact, two perfectly well-formed children in all respects except the absence of one body. The one body seems to have been moulded by the handiwork of nature as perfectly as though it had been intended for a single child, except, perhaps, a little larger in the thoracic region, as may be seen from the picture. The single child is a male, and weighs three pounds; the Thoraco-Gastrodidymus are females, and weigh four pounds. They were born at the seventh month of gestation.



A TRIPLET BIRTH.

One Single Child and a Well-Defined Case of Thoraco-Gastrodidymus.

On the morning of the 18th of February, 1899, I was called to attend Mrs. J. R. in her first confinement. On my arrival, I was informed by the good ladies in attendance that a child had been partly born, feet first, for more than two hours. On examination I found a male child with lower extremities and pelvis born, with the thorax, arms and head resting in the vagina and uterus. A very little assistance was required to accomplish the

delivery of a still-born child. The cord was severed and the usual attention given to the child, but any attempt at resuscitation proved a failure. After having exhausted all efforts at resuscitating the child, my attention was turned to the mother. I made an examination to ascertain the condition of the placenta. This examination revealed to me the presentation of the head of another child, and I so advised the mother and others present. I admonished the mother to be of good cheer, as I hoped we might be able to save the second child, though the birth was premature. At this suggestion she appeared to renew her courage, and soon after the pains returned. She labored hard for more than two hours, but apparently could not relieve herself, notwithstanding the amniotic fluid escaped and the child's head passed well down into the inferior strait of the pelvis. I could not account for the delay in what I supposed was a plural birth of a second child, with the head presenting normally, and everything else to all appearances favorable for a speedy delivery. At this stage of the labor I carefully prepared my hands, using the usual antiseptic precautions, and, passing my hand through the vulva and well up into the vagina, I clasped the head of the child between my thumb and fingers and made forcible traction as the pain came on. In my efforts to force the child down I felt something slip which caused a sudden jerk. This prompted me to investigate further, when I found the head of another child presenting at the superior strait. A forcible pain soon came on, and the birth of two children, instead of one, was the result, each one breathing independently of the other, showing conclusively that each of them was in possession of a separate set of respiratory organs. All efforts were made to keep the children alive, but to no avail. They died at the expiration of twelve minutes. After the birth of these last children the mother was for some two hours in a very critical condition, and appeared at times as though she might succumb at any moment. This, of course, made the situation all the more serious. She suffered from the shock caused by the severe labor, and also post-partum hemorrhage, which occurred shortly after the second birth to an alarming extent. This, with the loss of the children, and the thought of having given birth to this wonderful monstrosity, caused the shock from which more than two hours were required before reaction could be brought on and the hemorrhage entirely controlled. She finally rallied from the shock and went on and made a good recovery. No rupture of the soft parts resulted.

The male child was separate from the female in all respects, being supplied with a separate placenta and being surrounded by a separate amniotic membrane. The females were both in a single amniotic sack, and were attached by a single cord and one placenta. The placentas were not adhered, and were removed without any trouble. The post-partum hemorrhage resulted from shock and relaxation of the muscular fiber of the uterus, caused by a very exhausting labor.

The parents of these children are Americans, the father being twenty and the mother twenty-two years of age. They are a strong, healthful couple, and have informed me that the mother passed through the time of gestation without any unpleasant symptoms, escaping to a very large degree the usual morning sickness that is so troublesome to very many women from the second to the fourth month of gestation. The parents of this wonderful freak presented me the babes for preservation. I accepted their kind offer, and now have all three of them in a most beautiful state of preservation, and will, in a few days, transfer them to Rush Medical College, my *alma mater*, and place them in the museum.—*Cleveland Med. Gazette*.

Disappearance of the Uterus by Superinvolution. Porak reports, before the Society of Obstetrics and Gynecology of Paris, a very unusual case. The patient was a primipara, aged 21. She had a generally-contracted pelvis, the diagonal conjugate diameter measuring 10.5 cm. After a labor of 72 hours, she was delivered by forceps; the perineum was then found ruptured to the anus, and the external genitals were the seat of sloughs. The patient was very collapsed. Two days after there were sloughs of the vagina and cervix as well as of the vulva. For 10 days the patient was in a most critical condition. The temperature went up to 40°C., and for several days cold baths were resorted to at a few hours' interval. The lochia were offensive, and contained blackish *débris* derived from the cervix. Diarrhea set in, and albuminuria with scanty urine was shortly associated with delirium, followed by coma. The patient, however, slowly improved, leaving the maternity a month after confinement. Five weeks after leaving she reported herself. On making an examination, the vagina was found partly obliterated by adhesions; some of these were easily separated, and the finger reached a *cul-de-sac*. No trace of cervix was present, and, bimanually, the uterus proved to have disappeared completely; this was confirmed by rectovesical palpation by means of a finger in the rectum and a sound in the bladder. The vagina was denuded of epithelium in a great part of its extent. For some weeks the patient was kept under observation, and it was only by means of continual packing that the vagina was prevented from becoming obliterated by adhesion of its walls. A new lining was therefore made for the vagina by transplanting from the thigh two pieces of skin, 3 and 5 cm. respectively in diameter, and two smaller pieces each 1 cm. in diameter. This procedure was entirely successful, and the reconstructed vagina admitted the finger. When last seen, 5 months after confinement, sexual relations had been carried on without difficulty. There had been no menstruation during these 5 months. Porak attributed the disappearance of the uterus to superinvolution, and in the discussion on this paper Doléris took the same view.—*Brit. Med. Jour.*

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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The Contraction of the Palmar Aponeurosis in Diabetes. Marechal (*Commun. before la Soc. Belge de Neurol.*) contends that diabetes is capable of producing tropho-neurotic changes by acting either on nerve centres, peripheral nerves, or in some manner as yet unexplained, and mentions especially retraction of the palmar fascia, a symptom little known, and upon which bibliographical references must be very rare, for he only found one, viz., "*Thèse de doctorat de Viger*," published in 1883. Since then the author has had the opportunity of studying 2 cases: (1) Woman of 65, with sciatica, whose urine contained 60 grms. of sugar per liter. She also had typical palmar contraction. The diabetes seemed to be hereditary, for a brother died in diabetic coma. No gout or rheumatism existed in her parents. Her son, aged 41, showed neither rheumatism nor diabetes, but had beginning palmar contraction, the little finger of one hand only being strongly flexed. (2) Man, aged 58, robust, good family history. He was a well-to-do merchant, his station having been the result of hard work. During 5 years he had been growing more nervous and irritable, subject, at times, to attacks of depression. Latterly the onset of polydipsia directed attention to the urine, which was found to contain 8-15 grms. of sugar per liter. He had noticed during 4 or 5 years a progressive contraction of the palmar fascia of both hands, until finally firm cicatricial bands permanently flexed the fingers upon the hand, producing the typical contraction of Dupuytren, who first described it. Dupuytren regarded it as being due to pressure of tools, but it is found bilaterally, even in those who do not habitually use tools, and it has been observed in a child of 6. Hence it has been regarded as diathetic, gouty or rheumatic, but seldom has it been ascribed to diabetes. These disorders are related to disturbances of nutri-

tion and to one another. It is well known that the descendants of a gouty individual may develop diabetes, or *vice versa* (Charcot). In many subjects diabetes and gout may occur coincidentally. Durand-Fardel in 270 cases of diabetes, found 23 with gravel and 10 with gout. Just as Dupuytren's contraction is found in diabetes without any evidence of rheumatism, so is it found in polyuria-non-saccharin, for these conditions belong to the neuro-arthritis family. It seems probable, therefore, that palmar contraction belongs to the tropho-neuroses, and that it is induced by some alteration in the peripheral nerves or in the centres. The fact that it is almost always bilateral lends support to this view.

Three Cases of Tachycardia. J. M. Finney (*The Med. Press*, June 21, 1899). Case 1. Elderly lady, with chronic valvular and arterial disease, had had several attacks of tachycardia. Suddenly, with little or no apparent cause, the pulse would rise from 76 to 160, remaining rapid 4 to 6 hours, when it would return to its usual rate. The patient was not inconvenienced by the attacks. Case 2. Woman, 52, at the climacteric. No valvular or other disease of the heart. Apparently without cause, the heart would suddenly begin to beat rapidly, as much as 200 to 240; the patient, complaining of a sense of substernal oppression, would sit propped up, expression anxious, no dyspnea or cyanosis, and extremities warm. Several attacks followed, and as she gained the assurance that they were not necessarily dangerous, she bore them with equanimity. They did not prevent her from riding a bicycle, nor did the exercise seem to have any influence on the condition. During 13 months' travel on the continent she had no attacks, but they recurred on her resumption of household responsibilities, due possibly to the trouble and care connected therewith. Case 3. Woman 23, servant, previously healthy. Had an acute attack of inflammation of the throat, fever, temperature 104°, pulse 140. This attack lasted 4 days, when the temperature became normal, but tachycardia became pronounced, and the pulse rose to 160, finally to 240. This rapidity persisted 16 days, until her death. At no time did she complain about her heart. She experienced neither palpitation, oppression nor dyspnea. She was seized suddenly with pain in the right leg and foot, with loss of power, and on the following day she suffered acutely with pain in the calf of the left leg. Gangrene quickly supervened, mummification of the left, and of the right foot, moist gangrene with the formation of bullae. Pulmonary congestion, albuminuria and hematuria developed before her demise. Tachycardia is a rare condition, and very few necropsies have been made on subjects of this condition. It is due either to paralysis of the inhibitory nerve of the heart, or stimulation of the cardiac accelerators. The condition may come on without apparent cause, occurring at almost any period of life, and is paroxysmal and sometimes periodical. In Case 3, here recorded, the probable explanation is that of toxic influence on the cardiac ganglia. The myocardium was found healthy and the organ not dilated.

A Case of Diabetes Mellitus Quickly Following Mumps. Harris (*Boston Med. and Surg. Jour.*, May 18, 1899) reports the above condition in a farmer, white, aged 42. Family history negative. Patient never sick

till he had mumps. About a month later he noticed that he passed more urine than formerly. The amount voided gradually increased, thirst developed, appetite large, bowels irregular; he has lost much weight, eyesight poor, and from the onset he has had more or less salivation. Urine was found to contain 4.6 % glucose. The saliva contained traces of glucose. Blood examination showed 3,957,500 erythrocytes, white cells normal, hemoglobin 95%. The man was lost sight of, as he failed to continue to attend the clinic. The point of interest is the possible etiological relation between mumps and diabetes. It is well known that structural alterations may occur in the parotid after mumps, as they may also in the sublingual and submaxillary glands, testicle, prostate, ovary, mammary gland, kidney, thyroid and cervical lymph glands. It is certainly possible that the pancreas, a gland closely resembling the parotid, may also at times become altered, and, as von Mering has shown, structural alterations in the pancreas are capable of producing diabetes. The writer and Reale have both been able to bring about a mild glycosuria on dogs by the removal of the salivary glands. That marked changes in the salivary glands may occur in diabetes is proved by the author's case as follows, but their etiological significance is not so clear: J. H., aged 63, male, white, affected with diabetes. Without reciting details, suffice it to say he had had the disease 15 months, that he developed pulmonary tuberculosis and diabetic gangrene. At the necropsy the following conditions were found: Atheroma of vessels of base of brain, tuberculosis and abscess of lung, tuberculous ulcers of lower part of ileum, atrophy of pancreas and of salivary glands, closure of cystic duct, gall-bladder adherent to duodenum, ulceration of walls of these latter with consequent communication of their cavities. The changes in the pancreas and salivary glands, however, are of chief interest. In them the interstitial tissue was much increased—not uniformly so, however. In places the pressure has been so great as to destroy some or all of the acini in a lobule. As a rule every lobule is separated from its neighbor by bands of more or less organized connective tissue, but here and there 2 or 3 normal lobules may be found together. The excretory ducts are necessarily involved, often being much reduced in size and distorted. In a summary, the author suggests that, as diabetes may quickly follow mumps, there is a suspicion that they stand in the relation of cause and effect. The pancreas and salivary glands are of very similar structure, and it is very probable that mumps, which is capable of inducing changes in the one, may do so in the other, and that these changes may become chronic, ending eventually in such a degree of impairment as to bring about diabetes, at least in those cases where the pancreas is chiefly involved.

The American Protologic Society is the title of an organization effected June 7, 1899, during the meeting of the American Medical Association at Columbus. The object of the society is the study of rectal diseases. The elected officers are: President, Dr. Joseph M. Mathews, Louisville, Ky.; vice-president, Dr. Jas. P. Tuttle, New York City; secretary and treasurer, Dr. William H. Beach, Pittsburg, Pa.; board of counsellors, Dr. Samuel T. Earle, Baltimore, Md.; Dr. A. Bennett Cooke, Nashville, Tenn.; Dr. J. Royal Pennington, Chicago, Ill.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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The Gelatin Treatment of Aneurism. Dr. Fletcher (*Johns Hopkins Hosp. Bull.*, May, 1899) recently exhibited 4 cases of aneurism treated by the injection of a solution of gelatin into the subcutaneous connective tissue. Three of these were of the thoracic and one of the abdominal aorta. Patient 1 received 6 injections and died of perforation. No clotting was found in the sac. Patient 2 had 28 injections and has sensibly improved. Patients 3 and 4 had 16 and 21 injections respectively, with little or no improvement. In the last case the coagulability of the blood was markedly increased. The solution used was a 1% solution of gelatin in normal salt solution, the whole being thoroughly sterilized. Of this, 250 c.c. were given, at intervals of from 2 to 15 days, and the injections were made as far from the sac as possible, usually in the loose areolar tissue of the thigh. Considerable pain accompanied all of the injections. The beneficial effect of the treatment is supposed to be due to the increased coagulability of the blood. Laucereaux, who introduced the method, holds this view. Laborde claims that gelatin is not absorbed from the peritoneal cavity of rabbits. Camus and Gley found no increased coagulability after injections. Welch, in the discussion, suggested that the presence of an excessive number of platelets in the blood had perhaps more to do with a tendency to thrombosis than an increased amount of fibrin-forming factors, and called attention to the fact that the coagulum of an aneurismal sac is a true thrombus, and so differs from a coagulum formed outside the body.

A Case of Lymphatic Leukemia Combined with Pulmonary Tuberculosis. Baldwin and Wilder (*Amer. Jour. of the Med. Sc.*, June, 1899) report an interesting case from the Saranac Laboratory, of a man of middle age suffering from tuberculosis of the lungs. Two months before death the blood was examined, and was found to contain enormous numbers of lymphocytes and the other evidences of true lymphatic leukemia. The patient had developed lymphatic enlargements simultaneously with the pulmonary involvement. Which disease was primary? The autopsy showed typical lesions of tuberculosis of the lung, and great enlargement of the lymph glands all over the body, apparently without tubercular involvement. There were also deposits of lymphoid cells in the viscera. The in-

fluence of each disease upon the other is hard to determine. It may have been a case of pseudo-leukemia, transformed into true leukemia, as in cases reported by Martin and Mathewson and by Cabot. The authors remark that the comparative frequency of so-called pseudo-leukemia combined with tuberculosis as the suggestive cause of the lymphatic hypertrophy argues their case to have been of this nature in the beginning. They have collected 12 similar cases.

On the Question of Hypertrophy of the Heart. Michailow (*Bolnits. Gaz. Bot.*, Vol. X., Nos. 15 and 16) has performed some very valuable experiments in the laboratory of Prof. Sirotinin with a view of determining the cause of cardiac hypertrophy in renal disease. These experiments were performed on 14 animals, 6 dogs and 8 rabbits. On 3 of the dogs ligation of a renal artery was practiced, while on all the others the ureter on one side was ligated. For macroscopic comparison, the average weight of the heart of rabbits established by Tangl and that of dogs by Timopheero, were taken. The hypertrophy was, moreover, determined by microscopic examination, a method which has not been employed, as a rule, by other investigators of this subject. It was observed that the hearts of the animals killed 12 to 20 days after the operation did not present any appreciable macroscopic changes. The increase of weight was found 40 days after the operation, while in 2 to 2½ months the hypertrophy was quite marked. The histologic changes also varied with the time. Not before the twentieth day an increase in number of the nuclei was noticed in the walls of the heart, later the muscle fibers also multiplied, and, at the expiration of 60 days, interstitial changes had taken place. The blood vessels of the heart, as well as the body, presented a diffuse sclerosis, and simultaneously there has taken place an enlargement of the old and formation of new capillaries in the heart. The endocardium also showed signs of irritation. The heart ganglia underwent changes of a very important nature, changes which, the author believes, were never observed before. These were direct and indirect division of the ganglionic cells. As to the causative factor of cardiac hypertrophy, the author is altogether inclined to the belief that it resides in the irritation produced by the poisonous products of metabolism retained in the blood as a result of the existing nephritis.

A. R.

Restrictions as to the Handling of the Plague Bacillus. We learn through the *Indian Medical Record* (May 31, 1899) that the Indian Government, warned by the careless manner in which cultures of the bacillus of plague have been handled, has adopted stringent rules regulating the exportation of this dangerous commodity. The Australian Government refuses to permit the importation of the organism; while in France, legislative enactment has regulated the precautions to be observed in all bacteriologic laboratories. The fatalities from plague in the Vienna laboratory have not failed to teach the danger of such experimentation.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Anachlorhydria in Ulcer of the Stomach. Krokiewicz (*Prze-
glad lekarski*, 1898, No. 49, *Bolnits. Gaz. Bot.*, Vol. X., No. 3) reports
several cases of ulcer in which not a trace of free HCl could be found in
the stomach prior to hemorrhage; especially was this the case whenever
there were several ulcers. The author believes that the absence of free HCl
always points to the danger of a severe hemorrhage. In doubtful cases,
where a differential diagnosis between ulcer and cancer is to be made, the
blood count is the only means at command. In cancer, when cachexia
has developed, the number of red blood corpuscles will always be consider-
ably diminished, while in ulcer even preceding death the latter will often
number over 4,000,000. The author has seen several cases of multiple
ulcers, the number of ulcers reaching as high as 30, and he ascribes them to
embolisms.

Some Facts and Theories Relating to Auto-intoxication. Chit-
tenden (*Proc. of the Path. Soc. of Phil.*, June 1, 1899) discusses, in a very
able paper, the present status of our knowledge regarding the metabolic
factors of auto-intoxication. He quotes experiments of many observers
tending to establish the toxicity of many of the products of metabolism so
far isolated from the urine. Adenin seems to be the only one of the nucleic
bases possessing high toxic properties. In dogs, toxic symptoms, and even
death, were produced by the administration of the latter substance.
Hypoxanthin, on the other hand, does not produce any marked physiologic
effect, either in dogs or man, being readily converted into allantoin and
uric acid. All the other substances of the alloxuric group possess either
negative or feeble toxic properties. Intestinal putrefaction gives rise to
a large number of toxic substances, such as phenol, cresol, indol, skatol,
fatty acids, gases like methyl mercaptan, hydrogen sulphid, and methane,
together with the diamines, such as putrescin and cadaverin. Many or all
of these are responsible for many cases of auto-intoxication. The toxicity
of indol has been established by the recent experiments of Herter, who

found that the characteristic symptoms of indol poisoning in both dogs and rabbits are cardiac and respiratory depression, general prostration, marked contraction of the pupils, irregular clonic spasms and increased reflex excitability. When the quantity of indol injected is large, death results from cardiac failure. In chronic indol poisoning brought about by subcutaneous injections of small quantities, profound disturbances of nutrition are produced which may end in death in the course of a few weeks. On *post-mortem* examination histologic changes are found in the liver, which is congested and undergoing degeneration. In man very large doses were required to produce any toxic effect. In conclusion, the author expresses the opinion that none of these toxic substances are directly responsible for the symptoms of auto-intoxication, but their presence in the circulating blood may induce changes which produce a disturbance of nutrition of the nerve cells, and thus indirectly bring about the results observed.

On the Diagnosis of Cancer of the Digestive Organs. Lenetz (*Vratch*, Vol. XX., No. 8) calls attention to the fact that when cancer of the stomach is diagnosed during life, an autopsy often reveals cancer of other digestive organs, while the stomach is free from any malignant disease. He explains this by the absence of any single symptom or group of symptoms pathognomonic of cancer of the stomach alone. The absence of free HCl, he says, is the result of a lowered vitality of the general system, and is associated not only with malignant disease of the esophagus and stomach but with cancer of the liver, intestines and pancreas as well. Moreover, free HCl is, as a rule, diminished or totally absent in protracted catarrh or atrophy of the mucous membrane of the stomach. The presence of lactic acid is dependent on the absence of free HCl, and therefore may occur in malignant disease of any other digestive organ. [Lactic acid may exceptionally be present in any protracted case of atrophic gastric catarrh.—Ed.] Again, malignant disease of any other organ besides the stomach will diminish the muscular tone of the pylorus to such an extent that an insufficiency of the sphincter may result, and the food, together with bile, may then regurgitate into the stomach from the duodenum, thus neutralizing the acid gastric secretion. The "coffee-ground" vomit is usually considered diagnostic of gastric cancer; but, in the first place, this appearance of the vomit may be due to admixture of bile, and, again, even when due to blood, it is still not pathognomonic of cancer of the stomach. If malignant disease of any other digestive organ is associated with cirrhosis of the liver, there will occur a dilatation of the gastric veins, leading to hemorrhages, often fatal. Regarding the sarcinae, their presence always excludes a diagnosis of gastric cancer; while, on the other hand, the presence of large immotile bacilli seen without staining [the author probably refers to the Oppler-Boas bacillus] is a very strong evidence of cancer of the stomach. Of course, in the presence of a tumor, the diagnosis of cancer of any organ is clear. The enlargement of the lymphatic glands, the cachexia, etc., are also symptomatic of cancer of any other part of the body. The author in conclusion points out the similarity of the symptoms produced by cancer of the duodenum to those of gastric cancer.

NEUROLOGY.

UNDER THE CHARGE OF

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On the Localization of Intracranial Tumors. Byrom Bramwell (*Brain*, Spring, 1899) writes an important paper in which he reports 122 cases of intracranial tumor which had been under his care during life. Forty of these cases were with *post-mortem* examination, and in 2 of these (tumor of the membranes of the left lateral lobe of the cerebellum; tumor and abscess of the left parietal lobe) the presence of a tumor was entirely unsuspected during life. In one case a tumor the size of a large egg was limited to the posterior end of the second left frontal convolution, and had produced complete destruction of this part, yet had not caused aphasia. We see from this paper that a large part of the cortical motor area may be destroyed by a mere growth without causing paralysis, that Broca's zone in a right-handed person may be destroyed without causing motor aphasia, and that the first and second left temporo-sphenoidal convolutions may be cut off from the other parts of the brain in a right-handed person without causing word-deafness. In 7 of the 11 cases in which the frontal lobe was involved, well-marked mental symptoms were present, and Bramwell believes that tumors located in the frontal lobe are more likely to be attended with mental symptoms than tumors in any other part of the cerebral hemispheres; he believes, also, that the temporo-sphenoidal lobe is, *par excellence*, the "silent" area of the brain. A tumor with hemorrhage in the *right island* of Reil and adjacent parts produced motor aphasia in one case in a *right-handed* person. This might have been merely a temporary aphasia if the patient had lived longer. Bramwell says he has observed other cases in which a suddenly developed lesion (hemorrhage, etc.) in the region of the right motor-vocal speech center has produced temporary motor-vocal aphasia in right-handed persons. Tumors in the occipital lobe he thinks are comparatively rare. He reports a case in which a cicatrix of an old syphilitic gumma on the outer surface of the posterior end of the left occipital lobe produced frequently recurring attacks of sensory (visual) Jacksonian epilepsy—flashes of light referred to the right eye—followed by temporary sensory paralysis (*i. e.*, right-sided homonymous hemianopsia). In another case, irritation of the left half-vision center produced frequently recurring flashes of light in the eyes, especially in the opposite eye. Bramwell reports a case in which the symptoms were clearly indicative of a syphilitic gumma of the right leg center, but the tumor was a glioma of the right optic thalamus, and had apparently produced irritation of the leg fibers of the internal capsule. Iodid of potassium gave relief to the patient for a time. No definite symptoms

of lesion in the optic thalamus were noted in 4 cases in which a tumor was found in the thalamus; unless paroxysms of flushings, which were very marked in one case, were due to this cause. In a remarkable case in which 4 tumors were found in the cerebellum—3 in the left, and 1 in the right, lateral lobe—no symptoms of cerebellar disease, except severe vomiting, were observed. The symptoms in another case—headache, vomiting, vertigo, marked double optic neuritis, a staggering gait, etc.—led to the diagnosis of cerebellar tumor; at the necropsy dilatation of the ventricles was found and not tumor. Another similar case is reported. This excellent paper by Bramwell can be recommended to all interested in intracranial tumors.

Antistreptococcic Serum in Epidemic Cerebro-Spinal Meningitis. McNabb (*N. Y. Med. Jour.*, Feb. 25, 1899) gives the results of his use of antistreptococcic serum in 2 cases of epidemic cerebro-spinal meningitis, one of which resulted fatally. He believes that it has a decidedly stimulating effect upon the nerve centers in meningitic coma, similar to that which follows the use of warm saline hypodermo-clysters; that phagocytosis is increased, thus antidoting the diplococcus intracellularis; that purulent infection of the exudate is minimized. Very large, frequently repeated doses of from 40 to 60 c.c. may be necessary, and the injections should be continued for some time.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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The Quantitative Estimation of Indican. Volowsky (*Vratch*, Vol. XX., No. 17), not satisfied with the methods recommended by other authors on account of their complexity and impracticability, has devised a very simple method for the quantitative determination of indican, which is practical for clinical purposes and takes only about 30 minutes. This method—which has stood the test of 2 years' use—is as follows: (1) The quantity in 24 hours and the sp. gr. of the urine are determined as usual. Into a suitable vessel are poured 10 c.c. of 25% sol. of acetate of lead and enough urine to make 100 c.c. If the urine is highly colored, it should be half diluted with water. This is well mixed, filtered, and 5 c.c. is poured into each of 3 test tubes. (2) With a burette, pipette or dropper, the end of which is drawn into a point, so that 20 drops equal 1 c.c., 1 drop of a sol. of chlorinated potash containing 1% of available chlorin is added to the first test

tube; 2 drops to the second, and 3 drops to the third. The tubes are inverted several times for 2 to 3 minutes. Each drop represents 0.1 gm. of Cl per liter of urine. (3) To each test tube are added 5 c.c. of HCl of sp. gr. 1.19, and the tubes again inverted and set aside for 4 to 5 minutes until cooled. (4) To each tube 1 c.c. of chloroform is added, and the tube inverted (not shaken) about ten times and set aside until the chloroform settles. If the amount of indican is normal (0.006–0.007 grms. in 24 hours), the chloroform in the first test tube will be slightly colored, in the second more so, and the third not at all. If there is an excess of indican, more drops are added until the discoloration disappears; on the other hand, if the amount is slight, so that no discoloration of the chloroform appears in the second tube, the solution of chlorinated potash is diluted 10 times with water. Calculation: The number of drops required to produce the highest discoloration is taken as a basis. If, for instance 1.5 drops were required the amount of urine being 1,000 c.c., 0.15 grms. of Cl would be required for a liter, and for 1,600 c.c., 0.24 grms. With a normal amount of indican, the variations are from 0.2 to 0.3 grms. of Cl. To obtain the proportion of indican to the total solids the following calculation is employed: The total amount of solids is estimated by Haiser's method. Normally, it is about 65 grms. in 24 hours. To produce the highest discoloration 0.26 grms. of Cl were used, equal to 0.005 grms. of indigo, or on 10 grms. the amount of Cl required would be 0.04 grms., equal to 0.001 gm. of indigo, which is taken as the normal standard. From a large number of investigations, the author draws the following conclusions: Indicanuria is often the sole cause of many acute as well as chronic diseases. This is proved by the fact that, by removing the indicanuria, many diseases can be cured within 3 to 4 days, while by proper treatment directed toward the cure of the indicanuria relapses during the course of chronic diseases may be prevented. [The author evidently means intestinal fermentation, of which indicanuria is a symptom.—Ed.]

A. R.

Floating Kidney with Intermittent Hydronephrosis. Kolisher (*Medicine*, July, 1899) states that the above condition more often occurs with floating kidney than is supposed, and that in a certain number of cases the symptoms point definitely to certain pathological conditions which furnish precise indications for treatment. He divides these cases into two groups from the standpoint of treatment; in one, if the kidney is placed in its normal position there is a copious discharge of urine, the tumor disappears and the increased urination bears some relation to the size of the tumor. In the second group the replacement of the enlarged kidney is not followed by the emptying of the distended organ unless attended with some other manipulation, such as deep massage or the catheterizing of the ureter to the renal pelvis. He thinks that the explanation of the first group of cases is furnished by a bending or torsion of the ureter due to the dislocation of the kidney. In the second group the renal pelvis may be unequally dilated, so that with the kidney in a normal position the uteral entrance is not at the lowest point of the pelvis, but is found at the bottom of a sacculated diverticulum. The directions to be followed in cases of

hydronephrosis and floating kidney are as follows: Replace the kidney and keep the patient in bed; wait twenty-four hours for the spontaneous emptying of the tumor. If this occurs, a simple anchoring of the movable kidney in its normal position is sufficient to effect a cure, and in the light of our present knowledge seems to be superior to McArthur's or Senn's operation. If, after 24 hours, no decrease in the tumor has taken place, ureteral catheterization is to be employed, accompanied by deep massage. If nephropexy is performed, it should be preceded by a nephrotomy, which should include such repair of the pelvis of the kidney as is indicated in the case; the ureteral catheter should be left in position to act as a guide during the operation.

A Case of Intermittent Hydronephrosis in a Child Successfully Treated by Operation. Setzke (*Australas. Med. Gaz.*, Apr. 20, 1899) reports a case of a boy, 10 years old, who was injured by falling from a horse. He complained of frequent attacks of excruciating pain in abdomen and back, mainly on the right side and extending to the legs, accompanied by vomiting. The urine at this time was thick and dark brown in color, after the passage of which the child always seemed to be relieved. The attacks came on weekly. Dr. Harvey diagnosed hydronephrosis. The author was called in some time after and, under an anesthetic, a tumor underneath the liver, protruding from the region of the kidney, having the size of a child's fist, was discovered. It was of circular form, not fluctuating, and scarcely movable. The urine at this time had a specific gravity of 1,021, a quantity of urates, flat epithelial cells as exist in the renal pelvis and ureters; no albumin or blood corpuscles could be found. An operation was suggested, and the only thing that could be discovered was a movable kidney, which was fastened, and after three weeks in bed the boy seemed to be entirely relieved. Since then, there has been no further trouble.

DERMATOLOGY.

UNDER THE CHARGE OF

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Erythema Scarlatinoides (Produced by Quinin). Taylor (*Virginia Med. Semi-Monthly*, May 12, 1899) reports a case of scarlatini-form erythema in a boy of 14, resulting from the use of quinin. The patient suffered from intermittent fever, for which quinin was exhibited in 2-gr. doses every 4 hours. After several days the fever was checked, and the patient was instructed to continue the medicine 3 times a day for some days. The day following there occurred a chill, accompanied by fever (102°) and a scarlatiniform eruption. The tongue was furred, with red

edges, the throat was slightly sore, but the patient complained of nothing except the itching. One day later the fever ceased, the only remaining symptom of importance being the eruption, which was diffusely present over the trunk, extremities and face. On the fourth day desquamation began, large flakes being cast off from the body and limbs, with almost perfect casts of the palms and soles. One year later another attack, similar, though milder, occurred. On investigation it was found that quinin had been administered by the child's mother just previous to the attack. One month later quinin was given in 3-gr. doses 3 times a day, to determine whether it was the cause of the eruption. After the use of this remedy for 3 or 4 days, the eruption again appeared and followed an exactly similar course as in the former attacks.

A Case of (Fatal) Acute Pemphigus. Hadley and Bullock (*Lancet*, May 6, 1899) describe a case of rapidly fatal pemphigus in a 23-year-old butcher. The patient had wounded his right thenar eminence on a piece of jagged bone while dressing the carcass of a sheep. On the third or fourth day blisters developed on the chin and anterior nares, followed the next day by a bullous eruption on the back of the neck, and later on the trunk, abdomen and thighs. The bullae varied in size from a pea to a large walnut. The temperature fluctuated between 99.4° and 103° F. Fresh crops of lesions developed, and the patient's condition became serious. Vomiting and severe diarrhea supervened; the pulse became frequent and feeble, and the patient died on the thirteenth day of the disease. On autopsy, the kidneys presented the appearance of cloudy swelling, the mesenteric glands were enlarged and there were evidences of hyperplasia of the lymphoid tissue of the intestines. Cover-glass preparation of the fluid of the bullae, made 2 days before death, showed the presence of diplococci. These were grown upon gelatin, bouillon and agar, and proved to be the same organism as was described by Démmé and others. Inoculations of the fluid contents of the blebs and of the bouillon culture into rabbits were negative. The authors do not consider it proven that the above described diplococcus is the cause of acute pemphigus. "Its absence in the internal organs would seem to show that the disease is, to a large extent, a toxic one, the toxin being probably bacterio-genetic."

General Hemochromatosis. Welch (reported in *Boston Med. and Surg. Jour.*, May 25, 1899) read before the Association of American Physicians the report of a case of general hemochromatosis. The patient was a man aged 25 years, who died of typhoid fever. He had a deep bronzing of the skin that was looked upon as the pigmentation of Addison's disease. Autopsy discovered the ordinary lesions of typhoid fever, and in addition a generalized pigmentation of all of the organs. The pancreas and liver were both pigmented and cirrhotic. The adrenals were pigmented, but otherwise normal. Glycosuria was present, but was probably a secondary condition. In the epidermis the pigment was confined to the rete layer; in the corium it was around the blood-vessels and sweat glands. It was

thought that the affection was a morbid entity and that the pigmentation was partly due to destruction of the erythrocytes and also to something in the blood which acted upon the parenchyma of cells and stimulated the deposition of the pigment.

White Nails. Weber and Krieg (*Brit. Jour. of Dermat.*, Mar., 1899) showed at the Dermatological Society of London, a man, aged 52, with white nails or leuconychia totalis. The patient has an old rheumatic valvular affection of the heart, and presents a rheumatic deformity of the small joints of the hands and feet. The finger-nail condition has lasted 4 years. All the nails of both hands are white, and show no lunula. They are rather flat, have longitudinal grooves, and are somewhat thinner than the normal nail. The folds of the skin at the root of the nail are everted, although the patient says he does not peel the skin back from the nails. There is no skin eruption upon the fingers or on any part of the body. A tendency to similar whiteness of the toe-nails can be observed. Unna reported a similar case occurring in a young man in whom the condition had been present from childhood. Giovannini's case was in a man who developed this condition after an attack of typhoid fever at the age of 12. The present case is the 5th one on record, 2 having been observed by Max Joseph.

Treatment of Lupus Erythematosus by Scarification and Pressure Pads. Lawrence (*Intercolon. Med. Jour.*, May 20, 1899) gives histories of 3 cases of ulerythema centrifugum (lupus erythematosus) successfully treated by fine scarification and the application of india-rubber pressure pads. Superficial scarifications numbering 400 to the inch "mince meat" the affected area. Iodoform is then rubbed in, and the rubber pressure pads applied for 4 days. General anesthesia is usually employed. Healing without scar formation or disfigurement is reported. The author has also successfully employed this method in treating keloid.

Toxins in Dermatology. Hallopeau (*Annales de Dermatol. et de Syphilog.*, VIII., p. 854) emphasizes the fact that toxins play a very important part in the production of dermatoses, and he even goes so far as to assert that they are the immediate cause of the great majority of cutaneous diseases. He applies the term toxins to "all morbid substances produced by living organisms," so that stings of insects, jelly-fish, certain vegetable poisons, etc., are regarded as toxins. He explains the pruritus of jaundice, the eruptions and pruritus of diabetes and the eruptions caused by abnormal renal secretions as being due to alteration in the quality of or excessive variation in the quantity of the normal products of secretion. The toxins of microbic origin which are produced in the alimentary canal are a frequent cause of cutaneous diseases. The eruptions which sometimes occur in the course of diphtheria, gonorrhea and the exanthematous eruptions are probably produced by the toxins resulting from the respective micro-organisms. Hallopeau thinks that toxins may be the cause of such diseases as acute eczemas, psoriasis, pemphigus, etc.—*Maryland Med. Jour.*

PEDIATRICS.

UNDER THE CHARGE OF

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Retropharyngeal Abscess and Retropharyngeal Adenitis. (*Ann. of Gynec. and Ped.*, May, 1899.) The article so titled is from the pen of Johann v. Bokay, of Budapest (translation by Edward M. Plummer), and is a scholarly presentation of this important subject. The author devotes some space to the history of the subject, showing that the affection was known to such celebrities as Hippocrates and Ambrose Parè. The first extensive study, however, was made by C. Fleming (1840). These abscesses are classified by the author as follows: (1) Abscesses called idiopathic. (2) Secondary abscesses due to congestion arising from inflammation of the cervical vertebrae, or from a superficial cervical adenitis. (3) Septic or metastatic abscesses. (4) Abscesses of traumatic origin. In 39 years, the author has seen 614 hospital cases (.2% of the cases seen at the Stefanie-Kinderspital). These figures correspond closely to those of Neumann.

Etiology. The author confines himself chiefly to a consideration of the idiopathic variety. Bokay, Sr., believed that all of these cases originated from retropharyngeal adenitis, though he thought that the term idiopathic might be retained. The author objects to this term, and believes that we should speak of "retropharyngeal abscesses from retropharyngeal adenitis." Most of the cases occur between the second month and the fourth year of life. A causal relationship exists between the affection under consideration and certain constitutional conditions, such as rickets, scrofulosis, etc. In only one case, however, did Bokay observe actual tuberculosis. (This child died of tubercular meningitis.) Syphilis, he observed in 8 cases. The acute infectious maladies are the immediate cause less often than is supposed. (Scarlet fever preceded the abscess 14 times, rubeola once, erysipelas twice and parotitis once.)

Traumatic abscesses result from the deglutition of foreign bodies and are rare. Bacteriologic studies of retropharyngeal abscess have been seldom made. Koplik found streptococci in every case examined; in one instance being associated with the bacillus lactis aerogenes.

Pathologic anatomy. The lymphatic glands initially affected are the "deep lymphatic glands of the face" and the "superior deep lymphatics of the neck." By their afferent vessels these glands (collectively called post-pharyngeal) communicate with the nasal chamber, the bucco-pharyngeal cavity, the ear; in a word, with all the cavities of the cranium. Idiopathic abscesses thus develop in the post-visceral space. When large and deep-

seated, they may push aside the larynx and trachea, or even rupture into the larynx and cause sudden death (Bokay, Sr.). Abscesses from congestion, when left to themselves, may point externally, either in front of or posterior to the sterno-mastoid muscle. When the cervical vertebrae are diseased, pus may burrow into the posterior mediastinum, the prevascular space, the pericardium, or the pleura.

Symptoms and Progress. The so-called idiopathic abscesses may be acute, subacute or chronic. (1) The first symptom, and the one that remains predominant, is *difficulty of deglutition*. This symptom attains its maximum when the abscess is fully formed. The younger the child the more marked is the dysphagia. (2) An equally important symptom is a voice with a nasal intonation and an obscured timber. (3) Respiration is always disturbed and shows the characteristics of stenosis of the upper air passages. (4) The head is held rigid and a little to one side; and a deep-seated ganglionic enlargement is found at level of the angle of the jaw on one or the other side. As the inflammation augments, the submaxillary region grows round and protrudes markedly. (5) Great stress is laid upon the local examination by inspection and palpation; and the author justly extols the latter method of investigation. (6) Fever, mild at the outset, but high when suppuration is established. (7) The pulse is not characteristic. (8) Nervous symptoms are present in isolated cases. Somnolence and eclampsia may appear when circulation and respiration are markedly disturbed. Bokay, Sr., observed 3 cases of facial paralysis following these abscesses. As a rule *secondary abscesses* develop very slowly.

Diagnosis. Careful exploration of the pharynx serves to make the diagnosis.

Prognosis. These abscesses rank among the gravest affections of childhood. The sooner the proper operative treatment is employed, the better will be the prognosis. Tender age, poor nutrition and constitutional disease militate against a favorable result. In secondary abscess the prognosis will depend upon the type of suppuration. The outlook is doubtful in traumatic abscess, and very bad in the case of metastatic abscesses.

Treatment. When the first signs of retropharyngeal adenitis appear, a bladder of ice or cold compresses should be applied to the submaxillary region. If suppuration is inevitable Preissnitz's compresses are used to accelerate the process, so that the abscess may be opened sooner. Whilst admitting the surgical advantages of an external incision, the author thinks that the disadvantages of the oral incision have been exaggerated. [In this view we can scarcely accord. Whenever the services of a surgeon can be procured, it would certainly seem more rational to resort to a method which admits of the modern after treatment of an abscess.]

A Study of Multiple Metastatic Angio-Sarcoma. (Wurde mann, Friend and Black in the *Amer. Jour. of Med. Sc.*, June, 1899.) After dwelling upon the histology of these cases, the authors mention that the characteristic symptoms of orbital tumors are : Exophthalmos, palpation, derangement of vision, pain, loss of motility, pulsation, the existence of a tumor, and the souffle produced by pressure of

the ophthalmic artery upon the branches of the dilated ophthalmic veins. From their own experience, as well as from an extensive perusal of the literature, they are led to believe that sarcoma of the orbit is necessarily fatal; metastasis sooner or later evidencing itself in the viscera. An interesting case is then reported. The patient, a little girl of 5 years, first displayed a left-sided exophthalmos. A month later Wurdemann found a tumor, and removed the same from the orbital plate. Surrounding tissues were curetted. Two months later the exophthalmos was more marked than at first and the surrounding bony parts were markedly involved. A tumor was also found in the right hypogastric region. The child was markedly cachectic. The tumors were declared inoperable. Two months later she died, and the autopsy and histologic study of the specimen revealed sarcomata, of the nature mentioned, in the brain, bones of the skull and abdomen. The abdominal growth involved the liver, right kidney and gall-bladder. Kidneys, pancreas, mesenteric glands and spleen were infiltrated with nuclear cells. The article concludes with a full bibliography.

THERAPEUTICS.

UNDER THE CHARGE OF

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The Application of Caffein in Cardiac and Renal Diseases. Sjenetz (*Vratch*, Vol. XX., No. 14) made some very important observations on the action of caffein. Being at first skeptical as to its harmlessness in the usual doses employed, he finally convinced himself of its decidedly poisonous nature. The three cases reported by him are very instructive: One is that of a young and healthy woman who, feeling indisposed, began to take powders of caffein citrate 0.3 gms. each every 2 hours. After taking 5 powders, she suddenly became unconscious. Subcutaneous injections of ether, blood letting, artificial respiration and other means finally succeeded in reviving her. She soon felt better, and 2 hours later was walking about the room, but unfortunately repeated the powders, and, after the tenth dose, suddenly dropped dead. The heart was firmly contracted, having stopped in systole. In the second case, a young man suffering from pneumonia received 0.2 gm. of caffein citrate three times daily, as a heart tonic. On the third day he suddenly died. The heart was found contracted, almost obliterating the cavities. The third case is that of a middle-aged woman, suffering from an acute exacerbation of chronic renal disease. Caffein was administered to her for its diuretic effect. After taking it for a few days, she died of heart failure. The heart

was also here found very much contracted. The author has administered this alkaloid in doses of 0.2 to 0.3 gm. 2 to 3 times daily in cases of cardio-renal affection and noticed the following results: On the day following the administration the arterial pressure markedly increased, the pulse became full but not changed in frequency, the amount of urine gradually increased, the dropsy diminishing but slightly. In 5 to 6 days the patients began to complain of tightness in the chest, shortness of breath, restlessness at night and general aggravation of the disease. On percussion the heart was found notably smaller. As soon as these symptoms appeared the administration was discontinued, and the blood pressure at once commenced to decline, the excretion of urine decreased, the pulse became soft, the patient feeling much better. The analysis of the urine, however, showed the presence of caffeine for many days (10-15), thus proving the cumulative action of the drug. Again, the author has noticed that the elimination of the caffeine is much slower when the kidneys are affected, and it is therefore contraindicated in renal affections.

A. R.

Medical Treatment of Intestinal Obstruction. Spivak (*Jour. A. M. A.*, May 27, 1899). (1) Every physician should consider his case of obstruction of the intestine, and for that matter, appendicitis, to be one of the 90% that recover without surgical interference, and, therefore, not lose courage; be resourceful and hopeful. (2) Lavage should not be omitted in any case of obstruction. (3) Cathartics should, in all cases of intestinal obstruction, be given a thorough trial, in the form of the infusum sennae compositum. (4) The best diet in cases of intestinal obstruction is absolute abstinence from food and drink. In cases in which the pain is not relieved by lavage, enemas, hot applications, etc., he does not hesitate to give codein hypodermically. [It is also not to be forgotten that the mortality after surgical intervention in cases of intestinal obstruction and appendicitis is largely due to the delay incident to such treatment.—Ed.]

Eight Cases of Toadstool Poisoning. Struble (*Med. News*, May 27, 1899) reports these cases which he has observed very carefully, and compared with the ordinary symptoms usually described in text books. These are generally produced by the *amanita muscaria*, and, according to Prentis, begin from 15 minutes to 2 hours after ingestion of the fungus: Colic, vomiting, diarrhea, contracted pupil, salivation, profuse sweating, cerebral excitement, disturbed vision, convulsions, slow, thread-like pulse, respirations short and stertorous, death from progressive loss of heart power. This is caused by muscarine; while in the author's cases, the fungus was the *amanita phalloides* (death cup), which contains, according to Chestnut, a toxalbumen, called phallin, which gives rise to the following symptoms in cases of poisoning: Cramps, convulsions, weak pulse, nausea, vomiting, extreme diarrhea, rice water discharges, death from asthenia. Cramps, probably due to destruction of blood. The symptoms described by the author in his cases, and given in his summary, are: Painless vomiting of a watery mucus, coming on 9 to 18 hours after ingestion, which appeared to be centric on account of the ease with which it is accomplished, and followed, in a few hours, with intense cardiac depression. There were no

cerebral symptoms, nor the sweating and salivation, as occurs in cases of poisoning by muscarine. Case 1. Ate supposed mushrooms at 8 A.M., noon and at 4 P.M.; vomiting commenced at 5 P.M.; died 44 hours after ingestion. Strychnin and atropin had no effect upon the heart. Case 2. Five and one-half months pregnant; ingestion 8, 12 and 4 P.M.; vomiting commenced 15 hours after first meal; died suddenly in 48 hours; no effects from strychnin or atropin. Case 3. Age 6 years, vomiting commenced 17 hours after first meal; died in 48 hours. Case 4. At 8 A.M. ate 4 tablespoonfuls; vomiting commenced 17 hours later; cardiac depression lasted about 4 hours; reacted well to stimulants; recovery. Case 5. Female, 2 years; was given a little of the broth, which she spat out; 18 hours later vomited several times; followed by some diarrhea; recovery. Cases 6, 7, and 8. Ate smaller amounts, and all recovered. He believes that a good effect might be obtained by assisting nature by giving croton oil, salines, or castor oil. Atropin, the antidote which should answer physiologically, does not seem to have any appreciable effect.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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A Clinical and Bacteriological Study of Diplo-Bacillary Conjunctivitis. Eyre (*Jour. of Path. and Bac.*, May, 1899) records a comprehensive study of the organism described by Morax and Axenfeld, as well as an experimental research into the lesions produced by the germ. The organism known as the bacillus lacunatus is a non-motile, non-flagellate, aerobic bacillus, 2μ in length and 1μ in breadth. In cultures it is pleomorphic, resembling Friedlander's organism. Spore formation has not been observed. Grows best at $37^{\circ}\text{C}.$, will not grow below $30^{\circ}\text{C}.$ or above $40^{\circ}\text{C}.$, thermal death point $56^{\circ}\text{C}.$ It stains with the usual anilin dyes, but requires rather prolonged staining. *Bleu de Roux* is recommended as the best staining agent. The organism shows peculiar reaction to Gram's method, retaining only a small amount of the characteristic Gram stain in some specimens; under most circumstances it is decolorized. It refuses to grow in the absence of serum in some form. Serum broth, serum agar, blood serum, ovarian cyst fluid, etc., may be taken as types of media upon which the organism will grow. On blood serum, streak cultures, there develops, after 18 hours' incubation, a moist, shining line which later is replaced by a shallow furrow. At first this furrow extends in depth only, but

later laterally, and in a week or more completes the liquefaction of the medium. In smear cultures on serum the isolated colonies appear in 24 hours as moist, circular depressions or pits, which gradually enlarge during the following 24 hours, rarely reaching a diameter of 3 mm. If the colonies are sufficiently close together, they coalesce, and liquefaction continues; in the absence of coalescence it may be arrested. There is an early and marked appearance of involution forms, the typic diplo-bacillus is rare, being replaced by organisms resembling diplococci, fine-pointed spindles, and long, thick, straight or curved rods. The diplo-bacillary character of the organism may be re-established by cultivation in serum broth. So far as the experimenter can determine, the organism is not pathogenic in any animal except man. Accidental and intentional inoculations in man are followed by typic lesions. With regard to the clinical features of the disease, Eyre records the following: Of 3,000 consecutive cases at Guy's Hospital, 2.5 % show diplo-bacillary conjunctivitis. Since 1896 over 200 cases have been examined. Neither sex nor age is an important factor. The affection is contagious, though not highly so. There is no definite relation to any particular season. With regard to the symptoms, the element of chronicity is most striking, the duration of the condition being from a few weeks to 10 months. There are few subjective symptoms—stickiness of the lid; adhesion in the morning; scanty, whitish discharge at intervals; slight photophobia; inability to work long by artificial light, and, late in the day, slight irritation and smarting of the eyes, and in some cases watering. One eye is usually affected first, the second becoming involved about a week later. Examination shows mucus-like discharge and concretions which adhere to the roots of the lashes and margins of the lids and inner canthus. The palpebral conjunctiva, particularly on the lower lid, is of a deep red color; the bulbar conjunctiva is slightly involved; caruncle deep red. Stained films made from the discharge show bacilli, some polynuclear leucocytes and squamous epithelial cells and a few fibrin threads. A few bacilli may be found within the leucocytes. With regard to the treatment Morax is quoted as stating that "a 1 in 40 solution of zinc sulphate, used every 4 hours, is specific." Axenfeld uses a 1% solution of the same salt. Eyre recommends a lotion containing chlorid of zinc $\frac{1}{2}$ gr., bichlorid of mercury $\frac{1}{8}$ gr, distilled water 1 oz., applied every two hours; 3 times a day the lids are anointed with vaselin containing 1 gr. of iodoform to the ounce.

Cycling During Pregnancy. Lucas Championnière is quoted (*Practitioner*, June, 1899) as favoring the use of the wheel during pregnancy. Its proper use produces an immediate favorable effect upon the respiration and circulation, while indirectly it acts advantageously upon the gastro-intestinal functions. The bicycle should not be ridden when fatigued or at the time of the menstrual periods. Riding to the point of fatigue, hill climbing and long distance riding are, of course, to be avoided, abortion or miscarriage having followed the neglect of these precautions.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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Diet in Tuberculosis. Stubbett (*Trans. of N. Y. Co. Med. Soc.*, 1899) said that it is a difficult thing to persuade many a patient with incipient tuberculosis that he must not, of necessity, stuff his stomach with concentrated nourishment from 4 to 6 times daily. In advanced cases at all times, and in a very few incipient cases when they first come under observation, specially arranged diets are necessary. In 90% of incipient cases nothing is better than 3 substantial meals a day. The appetite of convalescing tubercular patients is something extraordinary. Climate, out-of-door life, and tonic treatment, all tend to increase the powers of digestion; nevertheless, in most cases, periodically there will arise disorders from over-feeding, which will require treatment. Nothing is more simple to overcome than those so-called bilious attacks, and after a rest of a few hours the patient will resume with avidity and benefit his process of stuffing. However, we know what a large percentage of tuberculosis is due, primarily, to lack of assimilation, and it is not strange that we find quite a percentage of patients with chronic gastritis and dilated stomachs. Most cases of this nature can be relieved by siphon irrigation of the stomach 3 times a week, and if dilatation be present Einhorn's electrode may be introduced, and faradization practiced. This is another auxiliary treatment, not only necessary, but imperatively demanded; surprisingly brilliant results generally follow, not only as to digestion, but indirectly affecting the tubercular disease.

Poison in Our Food. "*The Nation*," May 25, 1899, says: "In Pennsylvania, the Food and Dairy Commissioner, Levi Wells, has ascertained that chemical companies have had agents travelling regularly in the State to sell to butchers chemicals for preserving meats, the favorite being apparently boracic acid, which 'is certainly deleterious to health.' The packages are labelled, telling how the chemicals are to be used on meat. In Connecticut the Agricultural Experiment Station issued on May 1st its annual report on the adulteration of foods. It gives a summary of the extent to which frauds are practiced on consumers, thanks to Yankee ingenuity, combined with modern advances in chemistry. Of 63 samples of fruit jellies, two-thirds were adulterated, not

only with starch and glucose, but with anilin dye and poisonous salicylic acid. Out of 40 samples of marmalades and jams only 3 were pure. Of 47 samples of beer and ale, 12 contained salicylic acid, and 19 samples of sausages and oysters were found 'embalmed' by boric acid "

The Dynamic Theory and its Application to Medicine and Hygiene. Skwortzow (*Bolnits. Gaz. Bot.*, Vol. X., No. 4) read a very interesting paper before the First Russian Convention of Climatologists, Hydrologists, and Balneologists, in which he explained his original theory of electrogenesis of force. According to his views, it is not heat that the earth receives from the sun, but magneto-electric induction, which destroys the equilibrium of energy at different points of the globe, sending currents of energy from one place to another. The temperature of the atmosphere is dependent on the magnetism and electricity; these latter also setting in motion all the physical and chemical forces of the globe, being, in turn, regenerated and kept up by these forces. It is these electric currents which penetrate the earth and the atmosphere, imparting to the air, water, soil, and, in general, everything on the face of the globe, special properties which may be called "dynamic." The influence on the organism in health and disease of pure air, mineral waters and plants depends largely on this electric dynamization, the indicator of which is ozone. In employing baths impregnated with metals it is therefore necessary to have the baths insulated, so that the electricity will not pass into the ground.

The Sick-room. Eberson (*Zeitschr. f. Krankenpf.*, Feb., 1899; *Bolnits. Gaz. Bot.*, Vol X., No. 11) points out the important role played by the sick-room in the course and issue of a disease. The room, he says, should be the largest and brightest in the house, and one situated either south or east, looking into the yard, so as to be excluded as much as possible from the noises of the street. It should be occupied only by the patient, and no others should be allowed to sleep or work in it. The furniture should consist, if possible, of 2 beds for the patient (one for constant occupation, the other for removing the patient when his bed is made). The bed should be placed at a distance from the wall; a couch for the nurse, a small table or chest, a larger table, an easy chair, and several other chairs. Of utensils, one medicine glass, a bottle for water, a small and large spoon, a glass spittoon, a bed pan, and pen, ink and paper. All other useless furniture—as carpets, curtains, etc.—should be removed from the room. During the winter, sufficient ventilation is accomplished by the open fireplaces. During the summer, however, the room can be ventilated either indirectly or directly. To use the first method, the windows in the adjoining room are opened for 2 hours, while the doors leading to the sick-room are closed, to be widely opened at the expiration of the 2 hours. The second method is to be employed only when it is warm outside. In this case, the upper part of one window is lowered and the lower part of the other raised, so as to prevent a draught. Ventilation should be done 3 to 4 times during the day and 1 to 2 times at night. The bed should also be well ventilated, during which process the patient is removed to the other bed. At the same time, the room is dusted by means of a wet rag moistened in carbolized water, and sprayed

with turpentine or oil of pine. The clothes of the patient should consist of a linen night shirt. The cover should be either of wool or lined with cotton and protected by a linen sheet. The toilet of the patient should comprise washing of the face and hands with warm water, to which cologne is added. The mouth is washed with a weak solution of salt, and in fever-cases the lips moistened with almond oil. In prolonged cases, especially in the old, the back and spine should be washed with aromatic alcohol. The bed clothes, as well as the patient's shirt, should be changed daily. The illumination of the room should meet the indications present. It should be bright in cases of depression, somnolence, stupor, morphin poisoning, pulmonary tuberculosis and bronchial or cardiac asthma. This kind of illumination is contraindicated in infectious diseases associated with fever, insomnia, irritation or disease of the brain, nerves or heart, apoplexy, migraine, and some inflammatory diseases of the eye. A dim light which can be produced by either dark curtains or painting the window panes with chalk, is indicated whenever a quieting and hypnotic effect is desired. In some cases of extreme excitability of the nervous system, insomnia or diseases of the eye (retinitis, iritis, etc.), the room should be dark. A red illumination is indicated in small-pox. The room temperature should always correspond to the condition of the patient, lower in cases of fever and higher in cases of anemia or disease of the bronchi and lungs. Wood is the preferred material for heating. The nursing should preferably be done by women having some training. Members of the family are objectionable as nurses.

SURGERY.

UNDER THE CHARGE OF

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Death from Dry Cupping. Parkinson (*Indian Med. Rec.*, May 31, 1899) narrates the unusual case of a Brahmin woman who, with the evident intent of causing abortion, used a primitive method of dry cupping the abdomen, and died from the ensuing infection and necrosis. The woman had placed a thin cake of mud over the abdomen to protect it from the heat, upon this a small mustard oil lamp, and had inverted over this a brass vessel with a neck 4 inches in diameter. Nearly 4 days later, the natives having meanwhile succeeded in removing only the base of the vessel, the patient reached the hospital and the abdominal wall was liberated, exposing a circular gangrenous patch, a foot in diameter. The sloughing

which ensued opened the abdominal cavity in a number of places and the patient finally died with tetanic symptoms. Attention is called to the unusual method of criminal abortion, as well as to the great destruction produced by a usually simple and safe procedure.

The Radical Cure of Reducible Hernia by Kocher's Method of Invagination, with Lateral Displacement of the Neck of the Sac.

Thomas (*Bristol Medico. Chirur. Jour.*, Dec., 1898) describes Kocher's latest modification of his method, which the author has employed with success in a number of instances. Without describing the method in detail, he points out the modification, which consists in carrying the invaginated hernial sac with Kocher's forceps well within the abdominal cavity to a point nearly parallel with the ant-sup-iliac spine. The abdominal muscles are incised upon the end of the forceps, the sac is drawn out, its excess cut off and the end sutured in the wound, which is closed. The other steps of the operation are identical with former operations. The difference is only that the sac is displaced within, instead of outside of the abdominal wall. In one case operated on by this method, the patient walked a quarter of a mile on the sixteenth day without a truss, with no effect whatever on the scar. Provided the patient has no cough and the case has run an aseptic course, he sees no objection in letting the patient up as soon as the skin sutures are removed. The scrotum should never be incised in a hernial operation; if there are adhesions, the testicle, etc., should be displaced upwards. The author finds the employment of sterile thread gloves facilitates these operations and prevents slipping, while they add to the chances of asepsis.

The Operative Treatment of Varicose Veins of the Leg.

Martin (*Therap. Gaz.*, Feb. 15, 1899) discusses the various operations that have been performed for this condition, and gives the results which he has obtained by various methods. These results lead him to say: "I believe that all 3 of the methods at present in vogue have their proper application. Where the varix is moderate in degree, even though extensive, and where the vein is dilated high up, the high division between ligatures, performed under cocain, should be given a trial. Should this fail, and should the vein be moderately dilated, either multiple ligations or multiple small excisions would be indicated. When the veins are enormously distended and tortuous, and particularly when they contain sacculations and thrombi, total excision is indicated. All of these methods of treatment should be supplemented by rest in bed for 2 weeks, with careful splinting, and by wearing a carefully applied bandage for at least a month. Operative dangers and complications are no longer to be feared."

The Advisability of Bone Suturing in Treatment of Fractures.

Nelson (*The Charlotte Med. Jour.*, Feb., 1899) says that the best mechanical appliances known not infrequently fail of accomplishing the highest results, even in the hands of those who devised them. There are yet some cases of fracture where deformity will persist even in the hands of the most skillful. Simple fractures of the leg or forearm will, with the most primitive treatment, yield good results, provided the joints are not involved; but

badly comminuted fractures, even in good localities, so to speak, frequently give untold trouble and the physician has often been mortified by his results, although the work has been carefully and thoroughly done. No method can produce perfect results in all fractures. The most unlearned must see that a certain class of fractures, if cured at all, can only be, at the expense of changed shape and impaired usefulness. The author makes "the broad statement" "that fractures take place in many portions of the skeleton and under many conditions, intrinsic or extrinsic, in which satisfactory results, without or with minimized deformity, are only attainable by suturing together the several fragments." "Also, that in many cases such procedure, instituted immediately after the accident, should be done as a routine method, both in order to save the patient valuable time as well as to lessen the fatigue and suffering incident to other methods of treatment." The author does not claim originality for this method of treatment, but details a series of cases where he has proved its value, and gives the following summary of the cases where such treatment is indicated: (1) All fractures where vicious union produces serious deformity or impairment of function, no matter how long the duration—provided the grounds upon which we act be reasonable. That is, where there is deformity or loss of function that can be corrected. (2) All fractures where ligamentous union exists demand this treatment to secure, either in whole or part, perfect performance of function. Where such faulty union is caused by intrinsic disease, as syphilis or alcoholism, the chances of success are lessened. (3) All recent forms of fracture, where muscular action renders difficult the maintenance of several fragments in opposition, no matter whether said fractures be simple or compound. All fractures involving the joints, particularly if there be comminution of the fragments entering into the composition of the joint. Of course, under all circumstances, the age, physical condition, etc., of the patient must be duly considered.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Zur Technick der Operation—Und Der Peritonsillaren Abscesses der Gaumen-Mandeln (Operative Technique for Peritonsillar Abscess). E. Brieg (*Deuts. Med. Wochens*, No. 14, 1899) for peritonsillar abscess proceeds as follows: After making sure, with an aspirating syringe, of the exact locality of the pus, a superficial incision is made, into which a hemostatic forceps is inserted, and forced deeper and deeper with

a rotary movement, at the same time separating the blades. In this way a large exit is made for the pus; one that closes more slowly than an incision, with the advantage, too, of avoiding hemorrhage, usually more or less abundant. (Abs. by Jankelevitch in *Rev. Hebdom. de Laryn.*, No. 23, 1899.)

Traitement de la Dysphagie dans les Laryngites Tuberculeuses par un Produit de Culture Microbien (Treatment of the Dysphagia of Tubercular Laryngitis by the Product of the Microbic Culture). M. Lavrand proposes to employ in the intense dysphagia of tuberculosis the microbial product extracted from the bacillus of Koch, which in the hands of Bourgeois has given excellent results in the treatment of early pulmonary tuberculosis. It can, in reality, render service in advanced cases of the disease. It is absolutely harmless, and will augment the strength of the patients. It lessens the dysphagia in tubercular laryngitis as well as pain when met in these cases. It exercises a favorable action on the laryngeal lesions, although far advanced, and gives results in those cases when ordinary means have failed. Four cases are cited proving these assertions. (Abs., *Rev. Hebdom. de Laryn.*, No. 21, 1899.)

Un cas D'Argyrie de la Peau et de Muqueses Consecutive a des Cauterisations Repetees de L'Arriere-Gorge par le Nitrate D'Argent (A Case of Argyria of the Skin and Mucous Membrane Following Repeated Cauterization of the Oropharynx with Nitrate of Silver). Meneau (*Archiv. Internat. de Laryngol.*, No. 1, 1899) has seen a patient of 73 years, whose throat had been cauterized more than a thousand times. The case had argyria of the skin of the forehead, which was clearly slate color; and of the chest, which was of a slightly paler tint. The buccal and pharyngeal mucosa were of a grayish shade. A mucous polyp of the left nasal fossa contained black granulations in the interior, of which examination disclosed the presence of traces of silver. (Abs., in *Rev. Hebdom. de Laryn.*, No. 21, 1899.)

Urticaire et Odeurs (Urticaria and Odors). Joal, who has made some study of reflex disorders occasioned by odors in persons predisposed, reports 3 observations where urticaria has developed under the influence of odorous emanations. The first was one in which the urticaria had been preceded by spasmodic sneezing, rhinorrhea, headache, vertigo and syncope, and was due to the preparation of aromatic coloring essences. The urticaria could be reproduced artificially. He added that in 2 other cases, one in which the urticaria was associated with asthma and hay fever, it has been provoked by iodoform, sulphid of carbon, rose, lilac and hyacinth. The author reports also some similar cases, and likens olfactory urticaria to nasal urticaria, of which it is merely a variety. He also calls to mind that Gueneau de Mussy considered hay fever and ordinary asthma as "internal urticarias." He thinks, also, that these two classes of phenomena are of a vasomotor nature, and have the same origin—either a nasal irritation or an olfactory impression. (Abs., in *Rev. Hebdom. de Laryn.*, No. 21, 1899.)

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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The Giant Haab Magnet in Removal of Foreign Bodies from the Eye. Fisher (*Jour. of the Am. Med. Assoc.*, May 20, 1899) discusses the relative merits of the small magnet and the large Haab magnet, and describes the technique of this latter instrument. The patient is placed in a comfortable position, in an operating chair or on an operating table, in such manner that the tip of the magnet will be in the line along which the foreign body is to be extracted. The patient and magnet are placed in position, then the tip of the magnet is touched to the cocaineized eye before using any electricity. If the metal has entered the eye back of the lens, the opening should be enlarged, if possible, and the oval tip of the magnet placed into the opening and the current gradually turned on. If successful, the metal adheres to the magnet. If there is failure the first time, the current may be turned off, and quickly turned on and off, and in this way the metal may be dislodged. If the original opening cannot be found, there is no objection to making an opening in the sclera back of the lens. If the metal is removed successfully in this manner, there is more liability to injury of the vitreous than there would be if a small magnet was introduced into the vitreous several times. If the foreign body is removed in this manner, the vitreous is not churned up, but a tract made in its entrance and another in its exit. There is certainly no objection to using the Haab magnet for diagnostic purposes, providing we are prepared to remove the foreign body, if we find one. If we suspect a foreign body in the eye and the lens is clear, we would not think of applying the tip of the magnet to the cornea, for we might injure a sound lens. If we have a clear lens we apply the tip of the magnet to the sclera behind the ciliary body. If we dislodge the metal we find the sclera adhering to the magnet. In such a case, make an opening in the sclera, and extract the foreign body. If the lens is opaque, there seems to be no objection to using the magnet for diagnosis, and placing the magnet in contact with the cornea. If no metal be found, no harm can come from the use of the magnet. In such cases dilate the pupil and cocaineize the eye, place the tip of the magnet in contact with the cornea at the sclero-corneal junction, then gradually move the rheostat till the iris bulges forward. Now turn off the current, and place the tip of the magnet in position to draw the metal through the pupil into the anterior chamber. When the metal is in the anterior chamber the operation is a simple one. Make an incision over the foreign body with a Graefe knife or a keratome, and extract with a small magnet. In operating with the giant magnet we should have a non-magnetic eye speculum and fixation forceps. If we operate through the sclera, we should have two non-magnetic retractors to hold the wound in the conjunctiva open. Choice of anesthetics must be left to the behavior of the patient. Cocain will be sufficient

in most cases. All magnets of this kind should have a rheostat, and the magnet should touch the eye before applying any electricity. The rheostat should always be moved slowly, in order not to use any more force than is necessary.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Treatment of Prostatic Hypertrophy. Ramon Guiteras, in a paper entitled "Some Illustrations on the Bottini Operation" (*Jour. A. M. A.*, July 1, 1899), concludes that castration, vasectomy and iliac ligation are of very little benefit in prostatic hypertrophy. The choice of operative procedure lies between prostatectomy and the Bottini operation, the latter probably having only one-half or one-third the mortality of the former. The cases best adapted for enucleation are the large, so-called glandular hypertrophies, where the prostate is felt, through the rectum, as a rather large tumor, and where the urethra is much elongated and distorted by the hypertrophy. The cases for the Bottini operation are those without marked hypertrophy, but with induration and middle lobe impediment. In these cases enucleation may not be possible; while the Bottini procedure will also benefit any case of the large variety. Indications for this latter method are: A nearly complete retention of urine, marked vesical tenesmus and vesical irritation not relieved by catheterization and vesical irrigation, marked cystitis or hematuria, and an increasing amount of residual urine. Marked arterio-sclerosis and grave renal or cardiac disease are contra-indications. Nitrous oxid gas has been successfully used as the anesthetic. With the Bottini instrument three incisions are usual: (1) A posterior incision 3 cm. long; (2) two lateral incisions 2.5 long. With irregular enlargement, affecting principally the middle lobe, the second incision should be anterior and 2 cm. long, and the third through the larger of the lateral lobes. A current of 45 to 50 amperes applied 80 to 90 seconds is usually required. The after treatment includes rest, diluents, urinary antiseptics, and, if necessary, antispasmodics and the insertion of a catheter which is permitted to remain 24 to 48 hours.

Protargol in Gonorrhea. Colombini (*Brit. Med. Jour.*) keeps at hand a 10% solution which he prepares by pouring 5 c.cm. of neutral glycerin into a small mortar, and adding to it 10 gms. of protargol, stirring up the mixture with a glass rod till a thoroughly homogeneous moist paste

is produced. This is next diluted with 95 c.cm. of cold sterilized water, and shaken up till a perfect solution is produced; this solution is kept in a colored bottle in a dark place. As required, a 0.25% solution is made by mixing $2\frac{1}{2}$ c.cm. of the standardized solution with $97\frac{1}{2}$ c.cm. of sterilized water; a 0.50% solution by mixing 5 c.cm. with 95 c.cm. of water; a 1% by mixing 10 c.cm., and a 2% by mixing 20 c.cm. of the standardized solution with 90 and 80 c.cm. respectively of sterilized water. These solutions he uses as urethral injections according to the stage of the disease. In the acute stage he uses the 0.25% solution. After making the patient pass water, and washing the glans and prepuce with some antiseptic solution, he first injects a syringeful of protargol in such a way that sufficient room is left for the outflow of the injection; then refilling the syringe (which is made to hold 6 c.cm) to two-thirds of its capacity, he injects the solution very slowly, blocking the meatus completely, so that it may not run out again. The syringe is carefully removed, the patient being directed to keep the meatus closed with his fingers for 15 minutes, and not to pass water for an hour. As the inflammation subsides, the strength is gradually increased up to 2%. The solution is injected at the temperature of the air. The first day one injection is given, the next one in the morning, and another in the evening; the third and following days one in the middle of the day as well. The injections are continued for 20 days after the cessation of the discharge, the daily number being gradually diminished to one. Colombini gives details of 21 cases, and sums up that the results were excellent in every respect. The gonococcus quickly disappeared, the subjective phenomena speedily ceased, the discharge was rapidly diminished and modified, and complete recovery occurred without any complication. According to him, it realizes the ideal of a remedy for gonorrhea, curing the disease rapidly and effectually, without the least irritation or undesirable after-effect on the mucous membrane.

GYNECOLOGY.

UNDER THE CHARGE OF

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Bromid of Ethyl in Gynecology and Obstetrics. Hammond (*Amer. Gyn. and Obstet. Jour.*, Mar., 1899) advocates the more general employment of ethyl bromid where pelvic examination under an anesthetic is indicated. He considers it the ideal anesthetic for this purpose. It requires but a very small amount; the return to consciousness is rapid and the post-anesthetic effects are practically *nil*. The employment of a pure drug must be insisted upon. In administration a towel is used, a dram of the

drug is placed thereon, and the towel applied over the nose and mouth, holding the edge snugly to the face and adding small amounts until narcosis is complete. Should rigidity intervene do not push the anesthetic, but withdraw until relaxation occurs. Its employment is advised in the following conditions: "(1) Gynecological examinations; in incising abscesses in the abdominal wall; in making vaginal puncture for the removal of pelvic accumulations; for the removal of stitches (when a narcotic is indicated); for incising a vulvo-vaginal abscess, or any like procedure of short duration, say 10 to 15 minutes. (2) In obstetrics—during parturition; for performing version, forceps application, or any obstetrical operation of brief duration. Ethyl bromid has a distinct field, and is preferable when so employed to either ether, chloroform or their combinations."

Epithelioma of the Vulva. Duret (*Jour. des Sc. Med. de Lille*, Mar. 25, 1899) discusses the origin and treatment of epithelioma of the vulva. He says it may begin in the clitoris, or in the anterior portion of the urethra, or it may attack primarily the labia minora. In the latter case it originates as a hard, ulcerated, and fungous plate between the labia minora and majora, extends to the vestibule and destroys the vulva and urethra. When it shows itself first in the region of the urethra, it forms around its external orifice a hard, vegetating ulcer, giving the finger the sensation of a tube of pasteboard; soon, with the near tissues, it becomes soldered, as it were, to the adjacent bony walls. When the epithelioma starts upon the clitoris, forming there a mass, it soon spreads to the anterior portion of the vulva toward the mons veneris, and is accompanied by sharp pains, radiating through all the pelvis. Inquiring into the cause of this disease, Duret claims that this form of cancer is often preceded either by kraurosis or leucoplakia of the vulva. Kraurosis of the vulva is a singular malady, leading to a general shrinkage of all parts of the external genitalia. In vulvar leucoplakia, whitened plates appear upon the labia, the vaginal walls, the neck of the uterus, and the interior of the urethra, being peculiar to the mucous membrane. At first opalescent and scattered, these may increase until they entirely cover the vulva and vagina, and, gradually thickening, seem in places like a porcelain covering of the vulva. There is an excessive keratinization of the epidermis in certain areas, in which, in fact, originates the transformation into epithelioma. These whitened, horny plates may remain without transformation 10 or 15 months, or even longer. This change has been averted by the breaking up of their surface, producing fine scales which detach themselves, and by the formation of branching fissures. In regard to the diagnosis of epithelioma it is liable to be confounded (1) with simple vegetations, (2) with lupus of the vulva, and (3) with syphilitic affections; but the first, the simple vegetations, secrete a virulent liquid unlike the ichor of a cancer, they readily yield to an energetic caustic which prevents their reproduction, and they have no hardened base, being remarkable for their softness. In the case of lupus the vulva is red and presents scattered fungous ulcerations which are without any indurated base; while the syphilitic chancre is more limited and has a little circle of characteristic induration. In treating epithelioma of the vulva, one can em-

ploy either the thermo-cautery or the bistoury. He thinks the former should be used only in desperate cases, where the lesions are far advanced, and it has the disadvantage of leaving a gaping wound. Ablation by the bistoury ought to be preferred in almost all cases, and in this operation all the tissues should be removed to the bone. When the epithelioma is limited to the clitoris or the labia minora, this intervention is not difficult; but in case of urethral epithelioma the surgeon ought to make the excision large and leave only the neck of the bladder toward the pubis, and fasten it by sutures of silk near the base of the clitoris. It is then easy to suture the mucous membrane of the vestibule to the neck of the bladder and thus reconstitute a true canal, a little short, it is true. Thus even an extended vulvar epithelioma is sometimes susceptible of a satisfactory reparation.

OBSTETRICS.

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Retention of Urine. Herrgott (*Ann. de Gyn. et d'Obstet.*, Apr., 1899) reports a very unusual case of retention during pregnancy. A 3-months' uterus compressed the rectum to such an extent as to cause a large accumulation of feces, which in time forced the uterus against the bladder, preventing its evacuation. Four and one-half liters of urine were drawn off, and enemata caused the evacuation of 8 chambers of fecal matter.

Radiography in Pregnancy. Varnier (*Ann. de Gyn. et d'Obstet.*, Apr., 1899) reports his experiments on a number of living women and cadavers with the X-ray, to determine the presentation position and posture of the fetus. This he accomplishes satisfactorily, after 6½ months' gestation. The fetal spine and extremities remain invisible, however. He first obtained a satisfactory contour of the fetal skull on February 13, 1899.

Rupture of Vagina During Labor. Horn (*Münch. Med. Woch.*, No. 18) describes a remarkable case of rupture of the vagina, separating it from the uterus, so that the hand could be easily passed into the abdominal cavity. The woman had a flat, rachitic pelvis and, after repeated attempts to deliver with the forceps, she was brought to the hospital in a

state of collapse. Craniotomy was performed, and, as the condition of the woman did not permit of coeliotomy, the tear was partially sutured and a gauze drain introduced. The patient recovered and left the hospital in 4 weeks.

Inversion of the Uterus. Braun-Fernwald (*Wien. Klin. Woch.*, No. 16) reports a case in a 2-para following a twin birth. The placentae were delivered spontaneously, and there was no traction on the cord. There was severe hemorrhage, and the protruding mass was easily replaced. The patient recovered.

Can Ergot Cause Rupture of the Uterus? Bong (*Monats. für Geburts, u. Gynäk.*, June, 1899) reports a case of rupture following the administration of 4 gms. of ergot by a midwife. The patient suffered from collapse, and a tear was found in the right side of the uterus. The delivery was by version. The author believes that tetanus uteri was produced by the ergot and the rupture then occurred at the point of least resistance. The autopsy showed that the abdomen was full of blood.

Permanent Separation of the Amnion and Chorion at Term. Nichol (*Med. News*, July 1, 1899) reports a case in which the fetus was enveloped in 2 sacs instead of 1, the amnion and chorion having failed to unite, as they should do at the third month. The microscope confirmed the nature of the sacs. Two bags of water thus existed. Seven other cases have been reported.

Accidental Separation of the Symphysis Pubis During Labor. Rutherford (*Louisville Jour. of Surg. and Med.*, June, 1899) describes such a case as follows: 4-para, 28 years old, the first child was a monstrosity, and was delivered with forceps at the sixth month. The second weighed 5½ pounds, delivered with forceps. With the third a craniotomy was necessary after unsuccessful attempts with the forceps. In the fourth labor, forceps were applied, with the hope of escaping a craniotomy. Traction was kept up at intervals for an hour, when, under strong traction, something was felt to give way. The forceps were removed and the child was born without assistance. Examination showed a separation of the symphysis pubis. Recovery followed an ensuing septicemia.

Notes on the Induction of Premature Labor. Coe (*Med. Rec.*, July 8, 1899) states that, while the gauze tamponade and water bags are invaluable for the purpose of softening and dilating the cervix and lower uterine segment, they cannot be depended upon to excite regular uterine contractions, provided that the membranes are intact. He cites several cases in point. He believes their use, however, should precede manual dilatation, and that prompt delivery should be done after full dilatation has been secured, rather than to let the woman suffer for a long period waiting for labor to begin. It is not necessary to anesthetize the patient to introduce the gauze or bags, in his experience.

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"Gynecology has evolved rapidly" are the opening words of a communication in which Dr. E. C. Coleman, himself an attending gynecologist to several hospitals, mildly criticises, in the *New York Medical Journal*, an

**The Treatment of
Movable Kidneys.**

extraordinary series of papers which have recently appeared from the pen of Edebohls of that city. The latter eminent gynecologic authority, whose surgical skill is beyond question, has devised some new methods of operating upon diseased appendices and loose or floating kidneys and discusses them from the standpoint of the gynecologist with a refreshing boldness and originality. Indeed, if Edebohl's teachings are to be accepted, gynecology has not only evolved but revolved, for his claims are somewhat revolutionary. The special field of the gynecologist has always been supposed to be the diseases peculiar to women, but appendicitis and floating kidneys are common to both sexes, though the latter are found more frequently in women. In view of the frequent failure of clinicians generally to diagnosticate the condition known as movable kidney, we are inclined to concede much credit to the gynecologists for the prominent part which they have played in popularizing in the medical profession a knowledge of this abnormality, as well as the ingenuity and skill they have displayed in overcoming it by surgical methods. But it must not be supposed either that they were the original discoverers of the affection or that the surgical procedures for remedying it, which their extraordinary energy and activity are helping them to monopolize, are the only promising methods for combating it.

Fourteen years ago the writer and Dr. John K. Mitchell, of Philadelphia, were members of a class of physicians who were studying abdominal diseases in Vienna under Oser, then and now a celebrated stomach specialist. A prominent feature of Oser's course then was a painstaking demonstration of how to recognize floating kidneys. And the subject was by no means new at that time. As to the treatment of the condition, it ought by no means to become accepted as orthodox doctrine that loose or floating kidneys necessarily demand operative measures. Indeed, the surgeons and gynecologists, including Edebohls himself, admit that, while one-fifth of all

women have movable kidneys, in only one-fifth of such cases are there any symptoms resulting, and that the only ones requiring an operation are those which produce symptoms.

Now, it is a fact that by judicious medical treatment, including for some cases a period of rest in bed with well-fitting abdominal belts, for all cases at some stage abdominal massage, special gymnastic exercises, appropriate diet, invigorating hydropathic procedures and, for most cases, faradic electricity, locally applied, along with intragastric applications of the same for the concomitant gastric displacements and dilatations, a considerable proportion of the cases of movable kidney can be wholly cured, the wandering organs resuming their normal positions and, as the natural fatty cushions are restored, retaining them. And by the same means, in practically all the cases, the symptoms can be removed, and thus, according to the admissions of our surgical friends themselves, all excuse for operative intervention may be obviated.

There is a growing appreciation of the fact that many of the ill effects that have been ascribed to hyperpyrexia alone are due chiefly to an associated toxemia. We are beginning to realize that not only have many of the good results ascribed to antipyretic measures been due to an action upon other factors in the disease than the temperature, but that fever in many affections is, of itself, a natural remedial agent. A recent case, reported by Dr. R. B. Christian before the last meeting of the Arkansas Medical Society (*Memphis Med. Month.*, June, 1899), illustrates the tolerance of the cerebro-spinal centres to extremely high temperatures. The case which was diagnosed as cerebral meningitis seems to have endured, for eleven days, an extraordinary fever without developing stupor, while delirium is only mentioned on a single day.

Hyperpyrexia and Consciousness.

The patient, a woman of twenty-six years, of fair previous health, developed nausea, fullness of the head and a temperature of 105° F. On the following morning the thermometer registered 110° F. and broke. During the day the temperature fell to normal, rising again to 110° F. at night. During the following ten days extreme daily temperature variations occurred, the fever rising to 110--117° F. daily and finally reaching 118° F. The patient now lost consciousness, and, although the temperature did not again exceed 103° F. until a few hours before her death, she remained stuporous, death occurring twelve days later, or twenty-four days after the onset of the fever.

These extraordinary temperatures were verified by a number of thermometers used in both axilla and mouth, and we are assured by Dr. Vinsonhaler, secretary of the Arkansas Medical Society, that the case is entirely authentic and that a similar case was reported before the '98 meeting of the Society, where the temperature also reached 118° F.

BOOK-REVIEWS.

THE HYGIENE OF THE MOUTH: A GUIDE TO THE PREVENTION AND CONTROL OF DENTAL DISEASES. By R. Denison Pedley, F.R.C.S., Ed., L.D.S. Eng.; Dental Surgeon to the Godiva Hospital for Sick Children, Southwark, London. With numerous illustrations. London, J. P. Segg & Co., 289 and 291 Regent Street W.; Philadelphia, S. S. White Dental Mfg. Company.

This is one of the few books of the present day which cover more ground than their titles indicate. The author shows very clearly, by reports of numerous cases in children especially, that doing away with suppuration in the mouth by the removal or filling of carious teeth may rapidly cut short those stubborn diarrheas and also nervous affections dependent upon gastrointestinal irritation, which were themselves presumably a consequence of infection from the source of pus formation in the mouth. The subject is discussed in two chapters, the first of which is devoted to "The Hygiene of the Mouth in Children in the Home, in the School and in the Hospital; With Some Account of the Relationship between Dental and Other Diseases."

Chapter II. treats of "The Hygiene of the Mouth in Adults" under various subheads, including especially the effects of carious teeth upon the general health and the methods of treatment. This brochure, or one like it, should be in the hands of every parent and every young person, especially those who have failed to receive proper instruction from their care-takers in these very important matters. The author advises that beginning in childhood tooth powders (various formulas for which he gives) should be used with a stiff brush *after every meal*. This free use of a stiff, close-fibered brush, coated with a more or less abrasive powder, if given, as is customary, an almost exclusively horizontal motion, is frequently harmful, and cannot be endorsed. The author wisely urges the routine examination of the teeth in every case of illness. Apart from some unusually bad proof-reading, which has suffered to remain such an unfortunate expression as "preventative disease" instead of "*preventable* disease," there is little in the book to invite criticism, though the author has quite ignored the fact that diseases of the teeth may be a result of excessive fermentation in the alimentary canal, as well as *vice versa*.

HAY FEVER AND ITS SUCCESSFUL TREATMENT. By W. C. Hollopeter, A.M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College of Philadelphia, etc. Second edition, revised and enlarged. Philadelphia, P. Blakiston's Son & Co. 1899. Price, \$1.

The fact that a second edition of this book was required in less than a year from the appearance of the first, is evidence that it filled a want. The author has not only made an exhaustive study of the rather obscure subject of hay fever, but apparently has justified the strong wording of the title of his little treatise by having worked out and fully described what seems to be a really successful plan of therapy for the affection. His method turns mainly

upon a very rational yet simple local treatment of the upper air passages by antiseptic, emollient and protective sprays and applications begun several weeks before the time when the attack is expected to appear and continued during it till controlled. But at the same time he treats the underlying dyscrasia by appropriate measures, especially mechanical, hygienic and dietetic.

AN EPITOME OF THE HISTORY OF MEDICINE. By Roswell Park, A.M., M.D., Professor of Surgery in the Medical Department of the University of Buffalo, etc. Based upon a course of lectures delivered in the University of Buffalo. Second edition. Illustrated with portraits and other engravings. 6½x9½ inches. Pages xiv.-370. Extra cloth, \$2 net. Philadelphia, The F. A. Davis Co., Publishers, 1914-16 Cherry Street.

It is gratifying that this remarkably interesting work has within a year of its first publication reached a second edition—a fact not more creditable to the author than to the profession that has evinced such an appreciation of it. The gradual growth and development of the science and art of medicine throughout the long ages is described in this book simply and necessarily with great conciseness in order to condense such an immense subject into a single volume, and yet it must have for every properly constituted physician all the fascination of a romance. No man could read it and not be broadened and liberalized in his mental attitude toward the schisms which still distract and weaken, to some extent, the influence which our guild as a whole should exert. On the other hand, no man could study it carefully and continue to be a narrow-minded sectarian in medicine.

ON THE STUDY OF THE HAND FOR INDICATIONS OF LOCAL AND GENERAL DISEASE.

By Edward Blake, M.D., member of the Royal College of Surgeons, etc. Second edition. London, Henry J. Glaisner. 1899.

It is a few months only since we had occasion to commend the first edition of this unique work. The second edition has been so much enlarged and so thoroughly recast as to constitute virtually a new book. It is really remarkable that so very much of interest and of diagnostic value can be found in so small a part of the body as the hand, including the pulse. The latter is discussed in this work with a fullness and thoroughness quite unusual in modern treatises. In the olden times, when comparatively few instruments of precision were used in diagnosis, practitioners were taught to study the pulse much more carefully than is usual at present. Indeed it has been of late too much neglected.

A MANUAL OF OTOTOLOGY. By Gorham Bacon, A.B., M.D., with an introductory chapter by Clarence John Blake, M.D. Philadelphia and New York, Lea Brothers & Co.

The student, for whom principally it was written, will find an excellent guide to the practice of Otology in this compact little volume. It contains but little that is novel in pathology or treatment, but what there is of the former is orthodox and sufficiently full, while the treatment is modern and complete. The chapters treating of the more frequent diseases of the ear are,

very properly, the most comprehensive, and it is these that the beginner will find the most helpful. It is scarcely likely that the recent graduate will undertake any of the formidable cranial operations that have become so prominent in surgical otology within the past few years; but if he is an enterprising and fearless young man with surgical aspirations, he will find in this manual a very satisfactory exposition of the indications for operation and of the operative methods that are at present in greatest vogue. The author's style is a little careless at times, but there is no ambiguity or timidity when it comes to the expression of an opinion. The book, without being profusely, is very well illustrated and the publishers have reason to be well satisfied with their part of the work.

LES REGENERATIONS D' ORGANS. Par Le Dr. Paul Carnot, Docteur es Sciences, Ancien Interne des Hopitaux de Paris. Avec 16 Figures dans le texte. ("The Regenerations of Organs." By Paul Carnot, Doctor of Science, late Interne in the Hospitals of Paris. With 16 Illustrations in the Text.) Paris, J. B. Bailliere et Fils. 1 fr. 50.

This little brochure of 96 pages is an interesting and valuable exposition of biologic matters of the utmost importance in the science of medicine. Chapter I. is devoted to "Regenerations in General," describing the mechanism of regenerative processes in various animals. Chapter II. to the "Mesodermic Regenerations," including that of the blood, the hematopoietic organs, the vessels, connective tissue, bones, cartilages and muscular organs. Chapter III. discusses the "Epithelial Regenerations," including that of the nervous system, epidermic structures, mucous membranes and the glandular organs generally.

THE MEDICAL COMPLICATIONS, ACCIDENTS, AND SEQUELAE OF TYPHOID OR ENTERIC FEVER. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, Laureate of the Medical Society of London, of the Academie Royale de Medecine de Belgique, etc. With a special chapter on the Mental Disturbances following Typhoid Fever. By F. X. Dereum, M.D., Clinical Professor of Diseases of the Nervous System in the Jefferson Medical College. Octavo, 267 pages, 21 engravings and 2 full-page plates. Philadelphia and New York, Lea Brothers & Co., Publishers. 1899. Cloth, \$2.40, net.

Prof. Hare never writes without having something to say, and always says it well. This volume is timely, and will be most helpful to every physician in general practice, for every such physician must see many cases of typhoid fever, a certain proportion of which he would never be able to diagnosticate correctly if he depended solely upon the teachings which were universally in vogue in the lecture rooms and text-books until within the last few years. "Any case of fever which does not reach a temperature of 103° by the third day, cannot be typhoid," it was formerly taught. How false this was, most busy physicians have learned for themselves by a more or less bitter experience; but such a book as this, written especially to point out the frequency of the aberrant forms of the disease and to picture the many guises under which it may hide itself, must prove a real boon to the younger practitioners. The work is divided into

seven chapters, as follows: I., "General Considerations"; II., "Varieties of Onset"; III., "The Aberrant Symptoms, States, or Complications of the Well-Developed Stage of the Disease"; IV., "The Complications of the Period of Convalescence"; V., "The Conditions Which Ape Typhoid Fever"; VI., "Duration and Immunity to Second Attacks"; and VII., "The Mental Complications." The last, from the able pen of Prof. F. X. Dercum, is naturally an interesting and valuable discussion of this important phase of the subject. A rapid perusal of this excellent book suggests two points only which might be said to invite criticism, and these can be easily met by a few additional pages in the next edition, which is certain to be called for at an early day. In Chapter V. the differential diagnosis between a very mild or irregular form of typhoid and epidemic influenza with only slight involvement of the respiratory tract, is not given. According to our experience, this is often difficult to make during the first few days when the Widal reaction can rarely be obtained. Then, it would have added to the value of the work if Prof. Hare had given some advice as to the most successful methods of treating the various forms of typhoid fever which differ decidedly from the classical types. One certainly should not be expected to treat the markedly cerebral forms in the same manner as those in which the enteric symptoms are predominant, nor do the cases with almost no rise of temperature, and with constipation instead of diarrhea, require the same diet and therapy as the severer types. This omission is the more noteworthy, in view of the fact that the author shows from a large array of statistics that the cold bath method of treatment conduces somewhat to the occurrence of hemorrhage. The antiseptic method has not met with much approval at the hands of most teachers in the East at least, so that even in the typical cases it seems to be still an open question what is the best treatment. On one long-mooted point, however, to wit, the proper treatment of perforation, Prof. Hare affords needed light of a practical kind by quoting approvingly the advice of Keen and others that an abdominal section should be made in such cases with the least possible delay. The mechanical execution of the volume is entirely commendable.

PRACTICAL MATERIA MEDICA FOR NURSES, WITH AN APPENDIX CONTAINING POISONS AND THEIR ANTIDOTES, WITH POISON EMERGENCIES, MINERAL WATERS, WEIGHTS AND MEASURES, DOSE LIST AND A GLOSSARY OF THE TERMS USED IN MATERIA MEDICA AND THERAPEUTICS. By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass., etc. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899. Price, \$1.50.

It is to be hoped that authors will not carry much further the enlargement of the titles of their books. Nurse Stoney has managed to get into the title of hers pretty much all of the table of contents. Nevertheless, she has done a real service to nurses generally. A careful examination of the volume shows little to criticise and much to commend. The materia medica part contains much more than nurses as a rule need to know and the information in the main seems to be accurate so far as it goes.

The author is particularly to be commended for warning plainly against the danger of giving the principal antipyretics and hypnotics in too large doses or for long periods, especially sulphonal. Next after care as to cleanliness and antiseptics, there is no point upon which it is more important to instruct

nurses very clearly. It would have been better if Miss Stoney had pointed out the dangers of trional with equal carefulness; but it would be asking too much to expect that a nurse writing for nurses should do more than most medical teachers writing on *materia medica* for physicians have yet done. In giving the antidotes to narcotic poisons, not enough stress is laid upon the importance of the prompt hypodermic injection of stimulants, especially of strychnin; indeed, we do not find strychnin referred to at all among the antidotes to such active poisons as aconite, antimony, nicotine, etc. Nevertheless, the book is full of valuable information, which is very conveniently arranged and classified so as to facilitate reference to it in emergencies.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart A. Hare, M.D., Professor of Therapeutics and *Materia Medica* in the Jefferson Medical College of Philadelphia, etc. Vol. II., June, 1899. Philadelphia and New York, Lea Brothers & Co.

This volume is even better, if possible, than the initial one. It contains an article on "Surgery of the Abdomen, Including Hernia," by Wm. B. Coley; one on "Gynecology," by John G. Clark, one on "Diseases of the Blood, Diathetic and Metabolic Disorders, Diseases of the Spleen, Thyroid Gland and Lymphatic System," by Alfred Stengel, and one on "Ophthalmology," by Edward Jackson, together with a copious index. All these are excellent and well-nigh exhaustive accounts of the present status of the various subjects.

THE PATHOLOGY AND TREATMENT OF SEXUAL IMPOTENCE. By Victor G. Vecki, M.D. From the author's second German edition, revised and rewritten. Philadelphia, W. B. Saunders. Price, \$2.

In our age of "conventional lies" and hypocrisy, even among the members of the medical profession, a book on sexual matters is likely to meet with unfavorable criticism, no matter how well it is written or how well-meaning the author is. The book before us, however, is on a subject of great importance to the physician, and is not to be ranked with the numerous books containing piquant stories of sexual abuses, sexual perversion, etc. It discusses a disease too prevalent in modern society and far-reaching in its evil effects on the moral, mental and physical well being of the victim. The author, a physician of considerable experience and extensive erudition, treats this difficult subject in a manner which makes the book a valuable addition to the rather scanty knowledge possessed on the subject of impotence. Although not free from entirely useless references to the sensual side of the question, it treats it with frankness and originality. Many of the author's views may be found eccentric and distinctly disagreeable to the reader, yet the merit of the exhaustive chapters on the etiology and forms of impotence, and treatment, will more than counterbalance the shortcomings. The publisher has done his part well.

A. R.

LORD LISTER AND SURGERY. By Robert Turner, M.A., M.D., F.R.C.S. Edin. London, Henry J. Glaiser. 1899.

This brochure of 28 pages embodies an account of Lister's great contribution to the surgical art. It is gracefully written and well worth reading.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By Charles E. deM. Sajous, M.D., and One Hundred Editors. Illustrated with chromolithographs, engravings and maps. Vol. III., Philadelphia, New York, and Chicago, The F. A. Davis Co., Publishers. 1899.

This volume is fully up to the standard of its predecessors, which is high praise. It is strong especially in its surgical features. The opening monograph on "Dislocations," and that on "Fractures," both by Lewis A. Stimson and Edward E. Keyes, Jr., are profusely illustrated and are exceedingly full and satisfactory. R. H. Sayre ably treats of "Hip-Joint Disease" in an article of over twenty pages with many fine half-tone pictures. Not less valuable is that on "Hernia," by Wm. B. Coley. Perhaps the best chapter in the volume is that on "Exophthalmic Goitre," by James J. Putnam. James Anders gives an excellent account of "Fatty Degeneration of the Heart," as well as valuable suggestions for its treatment. He recommends exercises of graduated activity, though he does not refer to the Nauheim resisted movements (Widerstandgymnastik) or other forms of Swedish movements which are extremely helpful in strengthening, in a safe and physiologic way, hearts weakened from whatever cause. Levison's exposition of "Gout" is thoroughly up to date, and the best we have seen lately. The same writer furnishes an account of "Indicanuria," which is at least better than is given in any of the text-books on urinary analysis, though less thorough than the great importance of the subject merits. The articles on various drugs are most interesting and complete, especially those on "Ether, Hydrastis and Ichthyol." The volume ends with a very satisfactory account of "Infantile Myxedema." The mechanical execution is on the same high plane as in the case of the previous volumes.

FORTHCOMING BOOKS. The following books are announced for publication early in the fall of 1899, by Mr. W. B. Saunders: Volume I. of "The International Text Book of Surgery" (in two volumes), edited by J. Collins Warren, M.D., LL.D., and A. Pierce Gould, M.S., F.R.C.S. Eng.; "A Text Book of Embryology," by John C. Heisler, M.D.; "Diseases of the Nose and Throat," by D. Braden Kyle, M.D.; "The Treatment of Pelvic Inflammations through the Vagina," by W. R. Pryor, M.D.; "The Hygiene of Transmissible Diseases," by A. C. Abbott, M.D.; and "A Manual of Diseases of the Eye," by Edward Jackson, A.M., M.D.

PRACTICAL NOTES.

Shortcomings of the Surgical Treatment of Epilepsy. At the German Surgical Congress Kocher referred to the failures from the usual surgical methods employed in the treatment of epilepsy. The statistics of Graf and Braun show a successful result in only 2 or 4 % of the cases. Von Bergmann stated that operations were only successful in non-hereditary cases of epilepsy, and that the only reliable operation was excision of the cortical center, while a fatal issue may follow as late as 4 years after the operation.

A Mechanical Laxative. Upton (*Phila. Med. Jour.*, July 22, 1899) advises white or liquid petroleum in doses of 2 or 3 ounces by mouth, as a harmless and very useful laxative. It is absolutely non-irritant, does not distend the bowel and is claimed to diminish flatulence.

Gastric Secretions in Organic Heart Disease. Murdock (*N. Y. Med. Jour.*, June 17, 1899), from a comparison of the gastric secretion in 67 cases, 23 of which were his own, concludes that there is no constant relation between the condition of the gastric contents and any one form of organic heart disease. In his own cases, the cardiac condition seemed neither to preclude nor to interfere with the gastric treatment, several patients, by faradization, lavage, hygienic procedures and diet, recovering completely from the stomach affection.

Petroleum Emulsions are not Nutrients. The use of emulsions of petroleum in lieu of cod-liver oil for wasting diseases has led to some interesting experiments by Hutchinson, which are reported in the *British Medical Journal*. It was found that all of the petroleum, which was administered in the form of a well advertised emulsion, could be recovered from the feces. While the experiments demonstrate that this substance is not absorbed, the author admits the possibility of its being of some value from its local action upon the gastro-intestinal tract.

Liquid Air in Medicine. White (*Med. Rec.*, July 22, 1899) refers to the fact that various micro-organisms may be exposed for a considerable period directly to the influence of liquid air (312°F. below zero) without injury, and mentions a number of the uses of this new agent in medical practice. In such remote lesions as herpes zoster, sciatica, intercostal and facial neuralgia, instant relief is obtained by one application over the spinal end of the affected nerve. It is claimed that an abscess, boil, carbuncle or bubo in the early stage may be aborted by one or more thorough freezings; while when pus has formed the liquid air is a very useful local anesthetic. Valuable results are also asserted from its use, as a stimulant in chronic varicose ulcerations, chancreoids, and other specific ulcerations. It may be applied in the form of a spray or upon a swab. Too intense or prolonged applications may, of course, lead to necrosis or gangrene, and the thorough freezing of a part may also render it so firm that it cannot be incised by the knife.

Treatment of Epithelioma. MM. Cerny and Trunecek have published at great length in the *Semaine Médicale* their treatment of epithelioma by daily applications of a solution of arsenic composed as follows:

Arsenious acid, xx grs. ;	
Proof spirit	} 3 iiss.
Water	

The result of these applications was a successive transformation of the cancerous tissue in sloughs which became detached, and finally left an ordinary granulating sore, which healed under the influence of antiseptic

treatment. No prejudice was caused to patients by the application of the arsenic, when care was taken to avoid touching the healthy skin. The pain caused by the action of the caustic was never so great as to oblige the patient to abandon the treatment. The curability of cancer by this method depended, however, on the degree of evolution of the neoplasm and on the seat of the lesion. As regards the first condition, it was necessary that the ganglions should not be indurated, and as to the second, the application of the toxic should be realizable. Such were cases of primary cancer of the teguments, the nose, the lips, the mouth, and certain limited lesions of the larynx. As to the duration of the treatment, it was impossible to fix any period with precision. Very small ulcerations only required 3 or 4 weeks to heal, while in other cases several months were necessary. However, it was sufficient to see the patient once or twice a week as he could apply the caustic himself. As to the action of the arsenical solution, the cancerous cells were first dehydrated by the alcohol, then their protoplasm became coagulated under the influence of the arsenic, degeneration of the cells of the connective tissue followed, provoking a serious exudation, which determined in its turn certain alterations in the modified cancerous cells; finally, a distinct inflammatory line of demarcation was produced between the diseased and the healthy parts, after which the neoplasm became eliminated as a foreign body.—*Corres. Med. Press.*

MEDICAL NEWS AND MISCELLANY.

Cause of Napoleon's Death. Napoleon Bonaparte died at the age of 52, of cancer of the stomach, in May, 1821. His father had died at the age of 38 of the same disease. Napoleon was the son of a very young mother. She was possibly not 16 when he was born, and certainly not 20. Cancer is, I believe, more common in the children of aged parents than of young ones. We must, however, here bear in mind the inheritance and also the depressing and annoying conditions under which Napoleon's last years were passed. There can be little doubt that mental depression disposes the tissues to cancerous changes.—*Univ. Med. Mag.*

The Meeting of the American Medical Association. The semi-centennial meeting of the American Medical Association, held in Cleveland, June 3 to 9, 1899, was one of the most successful and representative gatherings in the history of the Association. The retiring president, Dr. Joseph M. Mathews, of Louisville, gave an address entitled "Our National Body: Its Purpose and Destiny." Among the other notable addresses was that by Dr. J. C. Wilson, of Philadelphia, "A Century of Medicine in America"; that by Dr. F. W. McRae, of Atlanta, upon some points in the surgery of the alimentary canal; and that by Surgeon-General Sternberg, entitled "Sanitary Lessons of the War." The officers elected for the ensuing year are: President, Dr. W. W. Keen, of Philadelphia; first vice-president, Dr. C. A. Wheaton, of St. Paul; second vice-president, Dr. E. D. Ferguson, of Troy,

N. Y.; third vice-president, Dr. G. M. Allen, of Liberty, Mo.; fourth vice-president, Dr. W. E. D. Middleton, of Davenport, Ia.; secretary, Dr. George H. Simmons, of Chicago; assistant secretary, Dr. J. A. Joy, of Atlantic City, N. J.; treasurer, Dr. H. P. Newman, of Chicago; judiciary council, Dr. J. D. Griffith, of Kansas City; Dr. J. E. Cook, of Cleveland; Dr. J. H. Baillache, of Washington, D. C.; Dr. J. B. Lewis, of Topeka; Dr. J. W. Irvin, of Louisville, and Dr. Frederick Holme Wiggin, of New York. The orators for 1900 are as follows: Addresses in Medicine, Dr. J. E. Wither- spoon, of Nashville, Tenn.; address in Surgery, Dr. W. L. Rodman, of Philadelphia, Pa.; address in State Medicine, Dr. Victor C. Vaughan, of Ann Arbor, Mich. The ensuing session will be held at Atlantic City, N. J.

The William F. Jenks Memorial Prize. The fifth triennial prize of \$500, under the Deed of Trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Various Manifestations of Lithemia in Infancy and Childhood, with the Etiology and Treatment." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children"; and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or, if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1901, addressed to Richard C. Norris, M.D., Chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays, if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

Surgical Instruments May Be Admitted Duty Free. A decision of much interest relating to the importation of surgical instruments is noted in a recent number of the *Boston Medical and Surgical Journal*. An assessment of 35% *ad valorem* having been made upon surgical instruments imported by the Massachusetts General Hospital, a physician generously contributed an amount sufficient to cover the legal cost of the case. The decision made by Judge Colt, of the United States Circuit Court, reversing that of the Board of General Appraisers, should be most satisfactory to hospitals and colleges importing surgical appliances.

"The hospital corporation contended, and the court held, that the surgical instruments which were imported for use in the hospital in its clinics and training school for nurses were entitled to entry duty free, under paragraph 585 of that act, as scientific instruments. The amount of the duty as assessed was \$578. The court said: 'Looking at the whole of paragraph 585 and giving to it a construction in accordance with what seems to have been the intention of Congress, the term "scientific instruments" means instruments specially designed for use in any particular science, and which are principally employed for such purpose; and, surgery being a science, it covers the surgical instruments in question in this case, which were imported for the use of the Massachusetts General Hospital in its clinics and training school. The fact that such instruments are employed by surgeons in the practice of their profession does not make them mechanical instruments. Instruments of this kind, in our opinion, are scientific instruments within the meaning of the statute, until it is shown that their principal use is in the trades and arts. For example, an ordinary knife is a mechanical instrument, because its principal use is in the trades and arts, while a surgeon's knife, specially designed for use in surgery, and principally used for such purpose, is a scientific instrument.'"

Large Professional Fees. Recently (*Editorial Lancet Clinic*, July 29, 1899) Dr. D. I. Robinson, of New York, brought suit against a millionaire client for \$10,000 for ten visits, which, by the way, is not by any means the largest fee charged for medical services rendered men of large wealth. Not long ago a surgeon in San Francisco was voluntarily paid \$30,000 for performing a successful operation for appendicitis. It is reported of Dr. Howard A. Kelly, of Baltimore, that for an operation on a mine owner's wife and 21 days' attention he was paid \$21,000. Dr. Tiffany, of Baltimore, received \$10,000 for an operation; Dr. Chambers, of the same city, \$5,000 for operating for a stab-wound. Dr. C. T. Parks, deceased, of Chicago, received a fee of \$10,500 for a surgical operation. Dr. Bernays, of St. Louis, received \$5,000 for a single operation. No doubt this list might be extended, but not very much. In the practice of medicine \$5,000 and larger sums are not very frequent fees in any man's practice; \$1,000 fees are occasional, and more frequent, and yet these are exceptional. In the law, large fees are apparently much oftener paid, for which there seems to be a reason found in the valuation placed upon a human life. In some states the statutes place the valuation of a man at \$5,000, beyond which, in case of death caused by accident, in which a corporation or individual is at fault, a greater sum cannot be recovered in a suit at law. Hence, it may be said, a doctor practices entirely on property valuations of \$5,000 or less. In a New Jersey court a decision was recently rendered in which the life of a child was placed at only a few hundred dollars. The learned judge, commenting on his own decision, made a mathematical calculation of the amount of money it would cost to sustain and educate the child until adult life, when the \$5,000 limit would be reached. In countries where life is cheap the compensation for services of physicians is correspondingly small. In the legal profession men are sometimes called in court to face and argue

cases where hundreds of thousands and even millions of dollars are at stake, and if a lawyer can preserve to his client a large sum, he feels that it is no more than right that he should have a liberal share of the fund so saved, and makes his charges accordingly. His client, feeling that half a loaf is ever so much better than no bread, cheerfully divides. The lawyer is dealing with large sums, often many times more in value than a hundred human lives [?]. Large fees in either profession only go to the few. The physicians of the United States who have in individual instances collected \$1,000 fees are not numerous, while the great majority cannot say they have ever collected a \$500 fee.

Surgical Hints. All hypodermic injections may be rendered less painful, and be more readily absorbed, if the active substance is dissolved in saline solution instead of plain water.

In nursing women, every inflammation of the breast and nipple must be considered as having a bacterial origin, and should be treated like any other local infectious process.

In alcoholic coma always investigate the bladder. It is apt to be very full. If there is no stricture, the urine would drain itself out after a while, but if prostatic or other stricture should exist a rupture of the bladder might take place.

In administering chloroform to patients who have to be placed upon the side, as in some obstetrical operations, etc., place them on the right side if possible, as the heart's action is much better under chloroform in that position, than it is when the left chest is compressed against the table or bed.

In men, the intense scalding during urination in acute gonorrhea may be relieved by urinating with the penis immersed in a vessel containing hot water. Women with gonorrheal urethritis may similarly be relieved by directing them to urinate while taking a copious hot douche, or while sitting in a warm sitz bath.

After having succeeded in passing a catheter through a stricture, after some trouble, it is better to wait for some hours before withdrawing it. If you do not you may have just as much trouble in introducing another, whereas a catheter left *in situ* for a day or so will dilate the canal enough to allow you to pass the constriction quite easily.

In ankylosis resulting from disease still existing, passive motion is harmful. The only manipulation allowable in such cases is for the purpose of placing the limb, if possible, in the most useful position. In deforming arthritis, for instance, knees should be straightened out and elbows bent to a rather acute angle, under anesthesia. Then use rest, with splints and ice bags to prevent inflammation.

In women climacteric hemorrhages sometimes occur as the result of vasomotor disturbances or of arterial sclerosis. It sometimes happens that several such hemorrhages take place prior to the final establishment of the menopause. Women at this period always attribute such an occurrence to the change of life, but the surgeon must invariably examine the patient on account of the strong chances of cancerous trouble.—*Int. Jour. of Surgery.*

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[NO. 9

ORIGINAL PAPERS.

ON THE PRACTICAL ASPECTS OF DORSAL PERCUSSION AND IN PARTICULAR OF THE PERCUSSION OF THE SPINE.¹

BY WM. EWART, M.D. CANTAB., F.R.C.P., LOND.,

Senior Physician to St. George's Hospital and to the Belgrave Hospital for Children; Joint Lecturer on Medicine in the Medical School of St. George's Hospital.

THORACIC surgery, in order to keep up its present rate of progress, must be more and more dependent upon accuracy of diagnosis, and dorsal percussion, and particularly spinal percussion, may, in this sense, be regarded as more specially of use to surgeons. The services which it may render to them are likely to be identified, as indicated in an earlier communication,² with diseases of the spine and with prevertebral affections, both thoracic and abdominal. But with these the physician is also concerned, no less than with a more complete determination of the size of the intrathoracic organs, and it often rests with his diagnosis to provide that early opportunity for surgical treatment which is essential to surgical success. Nowhere is this more true than with affections of the posterior mediastinum, an early recognition of which is a duty for surgeons and physicians alike.

The fact that dorsal percussion has been persistently ignored can no longer be used as a practical argument against its being systematically taught. Radioscopy, coming at a time when the present studies had already reached an advanced stage, almost seemed to have rendered them superfluous; but, on the contrary, by stimulating our curiosity as to the normal and the pathologic conditions in the depth of the thorax, it has broken the spell of prejudice, and encouraged a ready method which

¹ A paper read before the Cambridge Medical Society. London. June 2, 1899, by Wm. Ewart, M.D. Cantab., F.R.C.P. London. From the author's manuscript furnished the INTERNATIONAL MEDICAL MAGAZINE. Its publication has been delayed by the failure of the electrotypes to arrive on time.

² "The Diagnostic Uses of Percussion of the Vertebral Spines, with General Remarks on 'Pleximetric' Bones and Viscera."—*The Lancet*, July 2, 1898.

is capable of yielding data sometimes more definite than those of the more complicated, difficult and expensive method of Röntgen.

I will not attempt the entire subject of dorsal percussion to-day, but confine myself to the more essential points relating to the thoracic organs.

Dorsal percussion implies some exertion, and some pain to the percussing finger. (To obviate this, I constructed, some years ago, an ebony thimble open at both ends and with flat sides; it answered the purpose well, but I fell more and more into the use of Sansom's pleximeter, which is difficult to improve upon.) Moreover, the results of dorsal percussion, unless it be performed with skill and with the help of a pleximeter, are not sufficiently

telling to lead to its persevering study. This may explain its having been neglected—I might have said forgotten—for it is not a new method, and some of the results which I have to lay before you are not new. Piorry, whose publications ranged from 1826 to 1866, devoted that long period to the study of pleximetry, but, owing partly to a bizarre nomenclature, partly to an over-zealous advocacy, he failed to secure for his methods and for his facts the appreciation of his contemporaries, and his results remained unknown to me until I had independently worked out my own on slightly different lines.

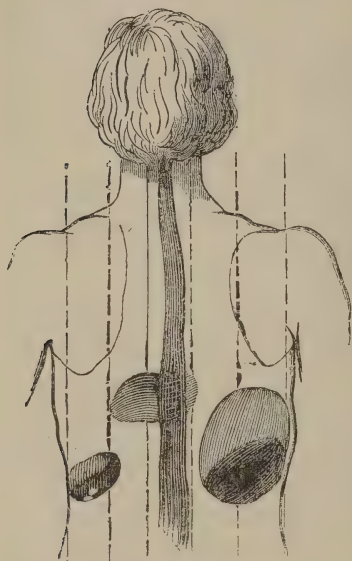


FIG. 1.

Piorry's original diagram ("Traité de Plessimétrie," p. 248. 1866). The lines were used as guides for his percussion.

The gradual stages through which the present results have been reached need not be detailed. The fact that they were obtained by percussion, and only subsequently verified anatomically, speaks well for the capabilities of percussion. We cannot, however, turn dorsal percussion to

practical account, clinically, without a definite knowledge of the underlying anatomy, of the results normally obtained by percussion, and of the methods to be employed.

THE ANATOMICAL RELATIONS.

The Lungs and their Lobes.—If the dorsal spine and the ribs be removed from the back in the dead body, lung tissue only comes into view on both sides of the chest, though the pulmonary fringe (which during life extends to the twelfth rib) may, by its retraction, allow a small surface of the liver and spleen to protrude under cover of the diaphragm, below the tenth rib.

The left interlobar septum (Fig. 2) is seen to rise to the level of the third spine, the less steeply inclined right septum not rising above the fourth.

The Aorta, Esophagus, Trachea, and Bronchi.—It is important to bear in mind that the aorta remains well to the left, the esophagus well to the right of the middle line, so that when the spinal column is removed in the dead body they are seen to lie parallel to each other, side by side. The trachea, covered from behind by the esophagus, is not median, but decidedly lateral in its intrathoracic course, slanting from the middle line which it occupies higher up toward the right, so that its angle of bifurcation is outside, or almost outside, the lateral line of the vertebral bodies. This I have verified by transfixing the costal interspace from behind close up to the vertebral column at the level of the fifth dorsal spine. The probe passed through the summit of the angle and perforated the infratracheal gland.

This lateral slant of the trachea has been previously described by Joseph A. Blake, of New York, and demonstrated by the Röntgen rays.³ It probably explains better than anything else the greater frequency with which foreign bodies drop into the right bronchus. The left bronchus has thus to cross the width of the spinal column.

The Pericardium.—The aorta having been raised, as well as the esophagus, the *pericardium* is exposed, and within it may be seen, beneath the horizontally placed right pulmonary artery, the posterior surface of the left auricle, which extends a little more to the right of the spine than to the left at the level of the eighth and ninth spinous process. The auricle thus lies immediately in front of the spinal column, the aorta and esophagus only intervening.

The right auricle does not reach this posterior plane, and only by hold-

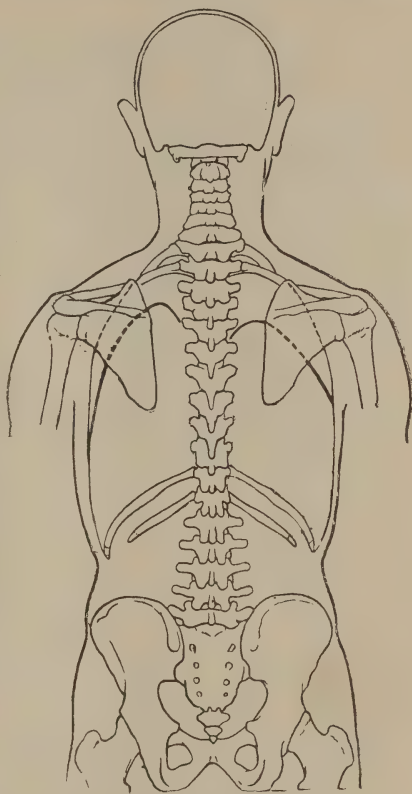


FIG. 2.

Showing the relations of the dorsal spines to each other, to the ribs, and to the scapulae. The difference in level and in shape between the right and the left lower lobes is indicated.

³ "The Relation of the Trachea and Bronchi to the Thoracic Walls, as Determined by the Röntgen Rays," by Joseph A. Blake, M.D., New York.

ing the right lung aside can it be seen, as the thin edge of a wedge, presenting the well known convex outline toward the right.

The posterior surface of the diaphragm conceals from view the abdominal viscera, which do not concern us to-day.

The Spines in Relation to the Bodies of the Vertebrae.—In determining

the levels corresponding to various structures, the varying degree of imbrication of the spinous processes must not be overlooked (cf. Fig. 2). This imbrication is most marked at the middle third of the dorsal spine, but elsewhere the vertical distance between the spinous process and the axis of the corresponding vertebral body is less considerable. The fifth dorsal spine is situated in the adult about one inch below the equator of the fifth vertebra. This spinous process can be readily found by percussion, and enables us to identify also the adjoining spines. We should note that the twelfth dorsal spine lies below the level of origin of the twelfth rib, whilst the first dorsal spine corresponds closely to the level

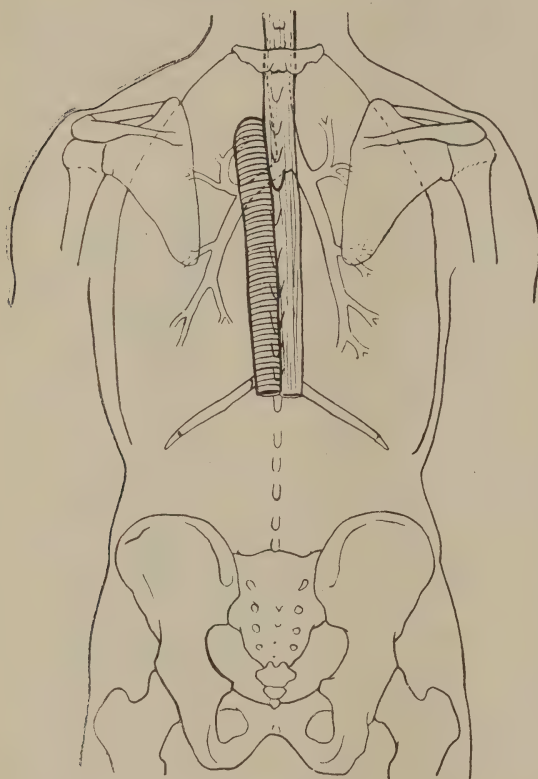


FIG. 3.

The aorta, the esophagus and the trachea viewed from behind in their mutual relations. The bifurcation of the trachea is shown to be entirely to the right of the middle line.

of origin both of the first and of the second ribs. The twelfth rib is easily identified by feeling its extremity in the back, the tip of the eleventh rib being perceptible only from the front. The scapula is generally said to extend from the level of the third spine to that of the seventh spine.

THE METHODS.

The auxiliary methods of auscultatory percussion and of auscultatory friction are not of service in the back, and the latter method is not available, owing to the viscera being covered by the lung. Ordinary percussion is

used, with its various modifications as regards strength. *Immediate* percussion is available only over bony prominences—such as the dorsal spines, the spinal process of the scapula, the acromion, and the head of the humerus; but the finger or the pleximeter may be interposed. A special feature of the *mediate* percussion required elsewhere in the back is the

considerable pressure wanted on the part of the applied finger or pleximeter, the percussion stroke itself being either light or heavy, according to needs. If a Sansom's pleximeter be used, this should not be of slender make, or it will break under the pressure applied to the hard muscles of the back.

The *pleximeter* is of great help in accentuating the partial dullness in the back, and in sharply defining their outlines. I am an advocate for training the finger to the finest work, but though it is capable of verifying the outlines arrived at by the pleximeter after these have been mapped out, I doubt whether it could have led to their original determination. It is, perhaps, because for a

long period the pleximeter had ceased to be used, that Piorry's results have been disregarded and dorsal percussion has practically remained since his time in abeyance. Much of our percussion, even when we use the finger only, and particularly when we employ immediate percussion over a bony surface, is essentially pleximetric, as will be explained in connection with Spinal Percussion.

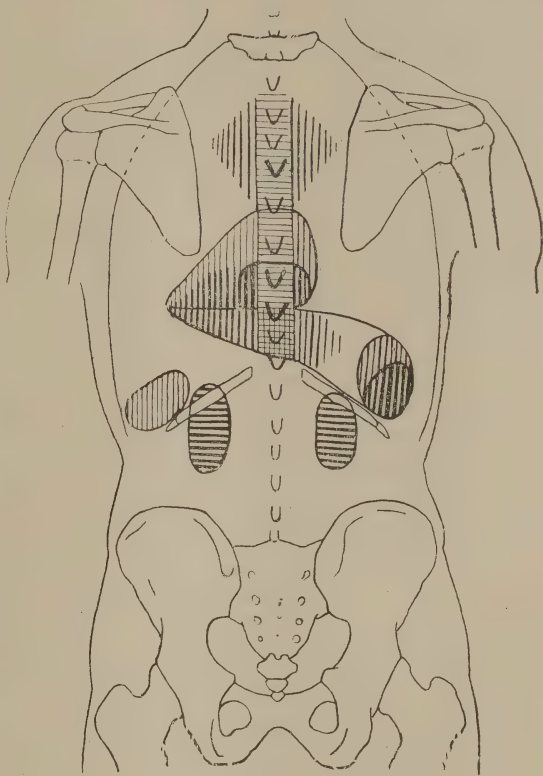


FIG. 4.

The dorsal percussion map. N. B. The post-cordial dullness includes the smaller and more marked "left auricular dullness." "Piorry's nucleus" of hepatic dullness is seen to the right, the splenic dullness to the left.

THE FUNDAMENTAL PRINCIPLES OF PLEXIMETRY.

1. Every pleximeter has a note of its own.

2. This individual note, which adds itself to the transmitted notes, is usually of high pitch and will intensify any slight dullness; and these are thus rendered quite obvious. Hence the great advantage of the pleximeter in analytical percussion.

3. An isolated pleximeter tends, when percussed, to give a uniform note in whichever part it be struck.

4. It also tends to transmit by conduction over its whole surface that quality of sound which predominates in contact with any considerable part of it. In this way slight local dullnesses may be submerged in a prevailing resonance.

5. Nevertheless, a large pleximeter in its different parts will be capable of yielding different values of sound, according to the underlying material.

6. Every rib and bone in the chest capable of being percussed is a pleximeter with a note of its own, which modifies that of the vibrations it may transmit.

7. On the other hand, pathological changes within the bone itself may greatly modify the note which it would yield normally. This is of diagnostic value.

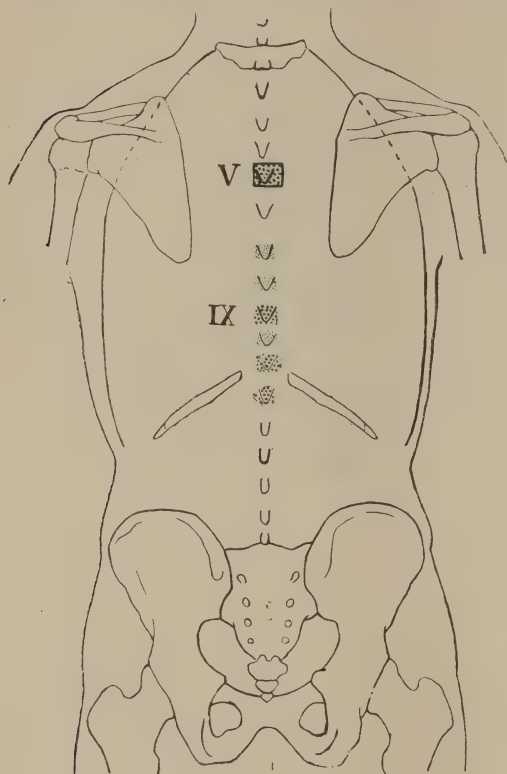


FIG. 5.

Showing the dull vertebrae: at V. the "Fifth spine dullness"; at IX. the auricular dullness of the ninth spine, above which the heart and below which the liver give rise to a partial loss of resonance of the corresponding spines.

In illustration of the foregoing, if a Sansom's pleximeter be held up and percussed in the air, it yields a high pitched, though feeble, sound. Let us now take a lumbar vertebra; this, also, when percussed, will give a sound of its own. These two bodies are indeed similar in their general constitutions. They both consist of a *stem* (which, in the vertebra, is double), uniting a small surface or *knob* with a larger *sound-collecting surface*—in the case of the vertebra a very large and convex one. Thus, whenever we percuss a spinous process, we are using a typical pleximeter; and, by its

means, we can sound considerable depths within the chest, in the same way as Sansom's pleximeter deals with its surface.

This other vertebra, which I now percuss, has an obviously different sound. I have caused wax to be run into its cancellous tissue, as a coarse analogy to those pathological infiltrations which may sometimes modify the vertebral note.

Again, this scapula has a note of its own. As I have pointed out elsewhere,⁴ the scapula is a huge pleximeter. When we percuss the acromial extremity of its spine, we obtain a fully resonant note in spite of the distance intervening between it and the lung, and in spite of its solid surroundings. The whole scapular surface is more resonant, although it has a heavy muscular investment, than the neighboring pulmonary surfaces, comparatively thinly covered and accessible to more direct percussion.

When pleuritic effusion rises high enough in the chest, dullness may be taken up and conveyed by the scapula beyond the actual site of the fluid, and the same is true of large subscapular consolidations. Nevertheless, fractional dullnesses of small size, such as those due to broncho-pneumonia, may, with care, be picked out over limited districts of the scapula.

In percussing the vertebra we are practising pleximetry, the spinous process or thin end of the pleximeter being within reach of percussion, whilst the broad vertebral end is in contact with resonant structures. And over the vertebral groove on either side of the spines, but for the interposition of the thick muscles which fill the vertebral groove, the same degree of resonance would obtain as over the spines themselves.

THE NORMAL "DORSAL PERCUSSION-MAP."

The anterior thoracic percussion areas are now well known, and they are mapped out by every student, as the "precordial dullness, the prevascular or retrosternal dullness, the hepatic dullness, the splenic dullness, and, lastly, the gastric semilunar areas of resonance, or Traube's area."

A knowledge of the normal distribution of resonance and dullness in the back is equally necessary for the diagnostic purposes of percussion in disease. But a full description of the normal outlines of the resonant and of the dull areas in the back has hitherto been wanting, for Piorry's diagram is incomplete, and the student has not hitherto had a percussion-map to refer to. The accompanying diagram may supply that want. The dorsal percussion areas include three resonant, and four dull outlines, viz.:

(1) A median strip of spinal resonance, along the tips of the spinous processes; (2) lateral bands of vertebral resonance on either side of the spines, and (3) the scapular resonance; and, on the other hand, (4) the interscapular dullness; (5) the post-cordial dullness; (6) the post-hepatic dullness, and (7) the post-splenic dullness.

The terms "post-cordial," "post-hepatic," and "post-splenic" dullness

⁴ *The Lancet*, July 2, 1898.

seem to be conveniently short and clear. They may be worth adopting; at any rate they will serve the purpose of this description.

All these local modifications of the thoracic percussion note are relatively unobtrusive. It is quite possible for a rapid and rather bold percussion to leave them unperceived; that is, disguised by the general dorsal resonant note which is so powerful in health. Or, again, if we be not careful, the muscular coverings may be an obstacle to our efficient percussion and set up spurious dullnesses. An attitude which will relax as many muscles as possible is essential; not only the arms but the elbows must be crossed in front and the head inclined. The absence of any major dullness, such as from fluid effusions or from pneumonia, will then be safely made out by two or three rapid strokes down the two sides of the chest. But the normal dullnesses we are now dealing with require careful percussion, and for the beginner some previous knowledge of their situation.

THE SPINAL RESONANCE.

The spinous processes are universally resonant, and spinal percussion is almost *sui generis* in the degree in which it illustrates the pleximetric principles. The spine is a pile of pleximeters along which a great deal of resonance is conducted vertically up and down the column, but each of which, as it possesses a sound-collecting surface, a percussion surface, and a rigid connection between them, transmits, when separately struck, vibrations limited to its own conduction. Piorry does not definitely refer to a systematic percussion limited to the tips of the spinous processes, but his diagrams represent the spine as a broad band of relative dullness. I have always found a resonant note both down the spines themselves and along the surface corresponding to the vertebral bodies.

The Lateral Bands of Vertebral Resonance.—Thus, while the subcutaneous position of the spinous processes gives us a *line of maximum resonance*, the pleximetric resonance of the vertebrae and of their transverse processes is perceptible on either side of the latter as a minor degree of resonance for a distance of fully one inch from the middle line. These two lines of resonance, the spinal resonance line and the lateral vertebral resonance, assert themselves at all levels and almost under any circumstances.

Any dullness situated across the middle line, whether due to normal or to abnormal conditions, would be modified or interrupted by the resonant lines in question. This is the case with the post-cordial dullness, which extends to the left and a little to the right of the strip of vertebral resonance, for we notice that this band of resonance modifies on either side of the middle line the cardiac dullness proper. The same is true of the post-hepatic dullness, and true also of the interscapular dullness.

Piorry, in spite of his life-long study of pleximetry, does not appear to have grasped these facts. His attention seems to have been concentrated

upon the relative dullness which is peculiar to bone; and, whilst recognizing the pleximetric function of bones, he does not make full use of a percussion of the vertebrae as a test for the condition of the surrounding viscera. He never refers to the vertebral column as being resonant, neither does he make any distinction between the line of the spines and the vertebral bands of resonance. On the contrary, he frequently alludes to the relative dullness of the spine, and the spine in his diagrams is shaded as though dull. Even in his later work ("*Traité de Plessimétrisme*," Paris, 1866) he still describes a dullness of the spine. He devotes Chapter XIX. (pp. 484 to 519) to the study of spinal percussion; but this is almost purely a surgical study, devoted to the diagnosis by percussion of all kind of spinal rotations, curvatures and outgrowths, including abscesses. Thus he dwells upon the coarser changes in outline rather than upon any modifications that might have been traced in the percussion note of individual vertebrae as a result of disease.

THE PERCUSSION OF INDIVIDUAL SPINOUS PROCESSES.

If the pleximeter be made to slide down the spine from the nape to the coccyx, whilst the finger deals a succession of equal blows of medium strength, the resonance obtained will seem to be about uniform throughout. But when light strokes are used this resonance fluctuates as the pleximeter travels; the neck will be found resonant, the interscapular region less so, and there will be some imperfect dullness from the seventh to the twelfth spine. The lumbar region will also be resonant, as well as the sacral, but each with its own degree and quality of resonance.

Proceeding now to a careful percussion of each successive spine downward from the seventh cervical, we find no marked change until the fifth dorsal spine is reached. This spine is decidedly less resonant than those above and below it. It is an instance of an isolated dullness of one vertebra. This peculiarity will be dealt with below, under the heading of "Fifth Spine Dullness."

The next departure from a full resonance over the sixth and seventh spines corresponds to the post-cordial dullness.

Much more marked is the dullness of the eighth and ninth dorsal spines. This will be referred to again under the heading of "Left Auricular Dullness."

The tenth and eleventh spines are the seat of a modified dullness, varying with individuals, and doubtless connected with the presence of the liver. This dullness is most marked in children and in those who from weakness or any other cause do not make full use of their pulmonary bases. The twelfth spine, situated below the level of the head of the twelfth ribs, sometimes partakes slightly of this dullness.

The lumbar spines are habitually resonant and often tympanitic, according to the state of the bowels. The great influence of the latter rather

detracts from the usefulness of percussion for the diagnosis of abnormal abdominal conditions, but the second lumbar spine is always relatively dull.

The sacrum is normally resonant, but dullness may arise from pathologic causes. There is, however, a very slight relative dullness about 2" in length along the sacral spines, beginning just below the base of the sacrum.

THE INTERSCAPULAR DULLNESS.

This important area of relative dullness (cf. Fig. 4) is not indicated in Piorry's illustration (*loc. cit.*, p. 284), nor in his account of dorsal percussion.

The interscapular dullness comes out clearly with the use of the pleximeter, but not so easily with the finger. It is continuous in the middle line with the cardiac dullness, but at the sides there is an interval between them. Together they occupy almost the entire space between the posterior borders of the two scapulae, but they can be readily differentiated by their slightly different degrees of dullness, and this may account for the fact that though Piorry did not make out, or at any rate describe, the interscapular dullness, he gives us the cardiac. The interscapular dullness is bilateral and practically symmetrical; the cardiac bilateral but much more extensive to the left. I will now roughly sketch them out on the healthy subject (cf. Fig. 4).

The lozenge shape which we make out for the interscapular dullness is constant, because it corresponds to the anatomical arrangement of parts. The dullness is dependent upon the relative absence of the sonorous influence of the lung in the corresponding thoracic district. Both lungs present here an incisure into which from above and below enter various structures which, except the bronchi, are not in themselves resonant, but dull, *viz.*, blood vessels, lymphatics, glands, fibrous tissue, nerves, etc., in addition to the mediastinal contents. In other words, the lozenge shape is that of the pulmonary incisures.

Let us bear in mind the pervading resonance of the spine and vertebrae. This asserts itself here, as at every other level. Therefore, in percussing the interscapular or the cardiac dullness across the middle line from left to right, as we reach the posterior vertebral groove, the dullness will be modified by resonance, and yet more resonance will be got over the spines themselves, beyond which the vertebral subresonance again prevails, until beyond the spinal groove the average interscapular dullness is once more obtained. Precisely the same modifications are observed in the cardiac dullness right and left. The result is that the careful percussor will always notice an interruption of the interscapular and of the cardiac dullness by two lateral bands of subresonance as well as by the spinal line of clear percussion note.

THE POST-HEPATIC DULLNESS.

There is no difficulty in making out the entire outline of the liver in the back, and its shape is analogous to that of the anterior outline, tapering from the broad right end across the middle line to a point which lies im-

mediately below the other triangular dullness, that of the heart, and combines with it to form the broad apex which may be percussed out in any chest below the angle of the left scapula (cf. Fig. 4). Piorry was familiar with a portion only of the post-hepatic dullness, and as this part is, from a practical clinical aspect, the most important, it deserves special description.

Piorry's nucleus of hepatic dullness (cf. Fig. 1 and Fig. 4) corresponds to the back of the broad end of the right lobe. The figure given by Piorry is true to nature, and this can be readily verified. The nucleus is a large oval area occupying the right outer thoracic base and consisting of a crescentic area which is imperfectly dull on percussion, and the oval outline of which is completed outwards and below by a smaller oval nucleus of considerable dullness, corresponding to the extremity of the right lobe. Normally, the axillary base to the outer side of Piorry's nucleus is resonant. To its inner side forcible percussion will elicit a resonant note, but the outline of the liver can be traced, by more careful percussion, across the middle line and to the left.

The remainder of the post-hepatic dullness is bounded by a horizontal line above and by an oblique line passing from the pointed extremity of the left lobe to the lower border of the right twelfth rib. I have not made out two horizontal lines of hepatic dullness analogous to the anterior suprahepatic and hepatic lines, but one only, and immediately above this rises the cardiac dullness.

The degree of the dullness of this section is variable, and appears to be influenced by the state and size of the surrounding viscera, particularly of the lungs and stomach. In children and in those who, for some reason, do not expand the base of their lungs down to the level of the twelfth rib, the hepatic dullness associated with that of the solid viscera occupying the same level gives rise to much more marked dullness, and this dullness may also be recognized on careful percussion of the eleventh and twelfth spines. But in the healthy adult the dullness is trifling, both over the spinous processes and on either side, and requires careful percussion for its recognition.

THE POST-SPLENIC DULLNESS.

Little need be said concerning this dullness, which, among those traced out by Piorry, is that which has perhaps been least forgotten. Its position is well known. It occupies the outer posterior base along the axis of the eleventh rib, and is almost contiguous with the dullness of the left kidney, from which it is separated by the tip of the twelfth rib.

THE POST-CORDIAL DULLNESS.

Piorry was, so far as I know, the first to map out the post-cordial dullness, and he mapped it out, though not with complete accuracy, still, on the whole, correctly as to position and size. His diagram gives us the

normal distribution of dullness right and left of the spine, the mainly horizontal position of the elongated area, and the pointed extremity which ends close to the line of the inferior angle of the scapula. According to my own percussion (cf. Fig. 4), the post-cordial dullness represents an elongated triangular figure with its long axis extending horizontally by three-quarters of its length to the left of the middle line, and by about a quarter to the right; this end, which is somewhat rounded, being the base of the triangle. Vertically, this dullness covers nearly three spinous processes, viz., from the seventh to the tenth. For its detection careful percussion is needed, particularly as we approach the apex of the triangle; but once the outline is mapped out none can fail to verify its reality.

The dullness is not uniform over this area. Dwindling, of course, toward the apex, it becomes much more definite half way between the apex and the middle line, until we reach the vertebral groove where the subresonance mentioned above asserts itself. Beyond the middle line this subresonance is again present, and passes into the dullness of the broad end of the figure, the dullness not being quite so full as that on the left.

Then percussing the area from above downward we find a difference between the upper part and the smaller lower section of the triangle. And this is important. The same distinction may be made out when we percuss the corresponding spinous processes. For, although resonant like the rest to strong percussion, these spines are to a lighter percussion just slightly less resonant than the others, particularly the eighth and the ninth.

The division between the two sections is a line stretching horizontally across. We can follow it to the right beyond the dullness; and, as this may be seen by looking at the profile of the subject, it corresponds with the upper level of the liver. Returning now to the apex of the triangle, we find that its lower boundary follows an oblique line downward to the right and takes the exact direction of the inferior line of hepatic dullness as traced in the front.

Piorry gives us no indication of any hepatic dullness to the left of the middle line and, therefore, he probably included as part of the cardiac dullness pure and simple that which is a blended dullness of heart and liver. I refer to the lower part of the dull area on the left.

Passing now to the small area of cardiac dullness, occurring on the right of the middle line, we note its crescentic shape, the outer boundary working back to the middle line, precisely in the same way as this occurs anteriorly at the right inferior border of the cardiac dullness. And with the small end of the pleximeter we are able to trace a resonant interval between the horizontal hepatic line and the convex dullness in question (cf. Fig. 4).

THE PRACTICAL APPLICATIONS OF DORSAL PERCUSSION.

Of most interest to the surgeon is the percussion of the spine and of the interscapular dullness.

As regards *spinal percussion*, it has been made sufficiently clear that percussion of the vertebrae has two separate objects: (1) The recognition of any abnormal dullness, due to disease, of the vertebrae percussed, and (2) the detection of prevertebral affections by means of the dullness conveyed through the vertebra from aneurysms, tumors, inflammatory thickenings, abscesses, etc.

Spinal percussion has always been in use for the detection of local tenderness; I now venture to submit it to surgeons for the finer purposes of diagnosis by means of the tactile and auditory vibrations elicited, for it does not appear that this principle has been utilized as a systematic method of surgical examination. Percussion may become a valuable indication as to the soundness of individual vertebrae. This point is easily tested in common spinal disease. Should one or more vertebrae be infiltrated with pus or solid deposit the note will differ from that of adjoining healthy vertebrae. The percussion of the spine for the purpose of investigating spinal disease was advocated and practised by Piorry; but, as I have said, he seems to have made little use of the pleximetric office which it so well fulfils. On the other hand, he studied and described very fully the percussion values of the pelvic bones, a subject to which, as well as to that of lumbar percussion, I can only make a passing reference to-day.

For the physician spinal percussion is of great value, provided he has acquired a knowledge of the normal condition, viz., the resonance of the spine as a whole and the modified resonance special to individual vertebrae.

The *general* resonance of the spine is peculiarly persistent. The stronger the stroke, the more resonance we seem to obtain.

In percussing the spine of a vertebra, we are eliciting the resonance of portions of the lung or of the intestine which occupy an almost central position in the body, and cervical vertebra corresponding to the upper respiratory cavities, a dorsal vertebra lying buried in resonant pulmonary surroundings, a lumbar vertebra facing the resonant gut, and a sacral vertebra being connected with the resonant contents of the pelvis—everywhere the extensive convex surface of the body of the vertebra collects resonant vibrations. You will find, on percussing the spinous processes from one end to the other, that they are all practically resonant, and it is singular that Piorry's pleximetric percussions should have overlooked this most striking of all instances of the natural application of the principle of pleximetry.

We can now understand the difficulty with which the resonant spinal note is overcome by the dulling agency of pleuritic or peritoneal fluid effusions. A unilateral pleuritic effusion leaves the spine entirely resonant. In double pleuritic effusion, dullness is conveyed to the spine itself, and the same occurs in pericardial effusion over a limited area, although from a different cause.

The post-hepatic dullness and the post-splenic dullness should be worth studying on their own account; their percussion is a necessary part of any complete examination of these organs. I shall not enter into a description of the variations which occur in the normal outlines and of the diagnostic significance attaching to them, the subject of this paper being limited

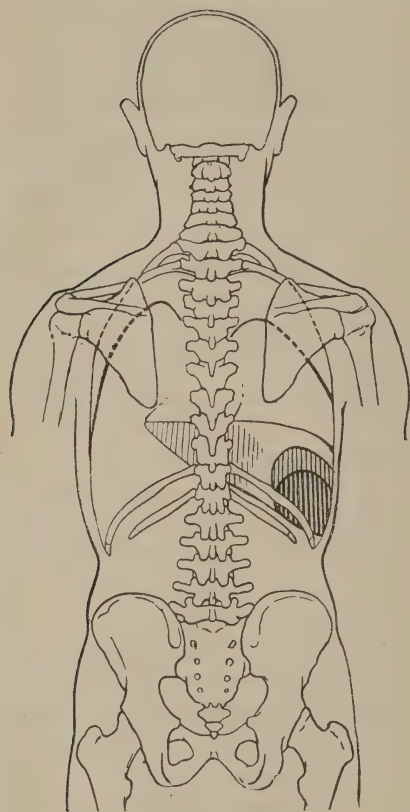


FIG. 6.

The conditions found in enlargement of the liver. Piorry's nucleus of hepatic dullness is no longer, as in health (cf. Fig. 4), isolated from but continuous with the anterior dullness.

taken for some pathologic change, and still more rarely have my pupils been misled by the normal interscapular dullness.

But the post-splenic dullness and Piorry's nucleus may be mistaken for pulmonary consolidations or pleural exudates, but the central portion of the post-hepatic dullness is also concerned in the production of a dullness which is observed in connection with intrapericardial disease; but, sometimes, as in children or in wasted adults and in pregnancy, as a result of imperfect basic expansion of the lung.

to the examination of the thorax. But these dullnesses have an indirect bearing upon the latter. By paying due attention to them mistakes are avoided which might occur from wrongly attributing the visceral dullnesses to pulmonary, pleural, or other complications. In our clinical examinations, so long as our percussion of the back is performed in a perfunctory fashion, the partial dullnesses in question do not interfere with our conclusion that the lung is practically sound and resonant down to the base. It is when accurate diagnosis is needed and the examination becomes more searching, as, for instance, when a little fluid or a slight consolidation is suspected, that we are apt to stumble across them and to put upon them sometimes a wrong construction. This undeserved result of zeal need never arise if sufficient experience of normal percussion be possessed by the observer. I have not infrequently witnessed it in connection with the post-hepatic dullness. Much more rarely have I known the normal post-cordial dullness to be mis-

THE LOWER DORSAL DULL PATCH.

The subject of dorsal percussion would not be complete without some reference to the lower dorsal dull patch, which is one of the signs associated with pericardial effusion. Owing to the imperfect topographical data of dorsal percussion, it had not always been recognized or understood; but after these preliminaries I can approach its discussion with greater confidence. It is induced by the presence of fluid in the pericardium, but the dullness itself is not that of the fluid or of the heart, for it is situated below the level of both. The patient, with very large heart, now submitted to examination, does not present the dull patch, neither is it ever present as a result of simple cardiac enlargement.

Its level corresponds to that of the eleventh and twelfth spines. Its shape is quadrilateral, two-thirds at least to the left of the middle line, one-third or less to the right of the middle line. Its total transverse width five to six inches in large subjects, and its vertical diameter four inches at the most. It is, as you see, entirely below the level of the heart and pericardium. You will probably agree with my views that this dullness is that of the liver, often pancreas and other abdominal solids, usually well conducted to the back. It is not the dullness of pericardial effusion, for this would occupy a higher level, but it is the normal visceral dullness, intensified by the fluid spreading over the surface of the liver and acting upon its vibrations as a mute.

The interscapular dullness is one in which the surgeon and the physician are equally interested; and it corresponds to a variety of structures, each of which is liable to important diseases. Alterations in the shape and extent of this dullness may afford valuable information as to the conditions prevailing in the mediastinum. When the mediastinal structures are the seat of consolidation, or invaded by new growth, the vibration is no longer of the resonant kind, and dullness, or partial dullness, occurs over the spinous process on percussion. Diagnosis may, however, be pushed yet further, and alterations in the degree of dullness of the spines of individual vertebrae may call our attention to early changes in those structures which immediately underlie the vertebrae, such as the aorta, the esophagus and the lymphatic glands. It is, however, obvious that no use can be made of this method without a preliminary acquaintance with the percussion note, normally yielded by individual vertebrae. Among the latter I have recently found that there is one which is differentiated from all others by its partial dullness.

THE FIFTH SPINE DULLNESS.

My attention was called to this region by a recent paper by M. Fernet,⁵ of Paris, in which he insists that an early diagnosis of phthisis is facilitated by the detection of an increase in the size of the bronchial and infratracheal

⁵ *Bull. de l'Académie de Médecine*, Paris, October 11, 1898.

glands. He makes out in these cases a dullness sometimes to the right and sometimes to the left of the spine and finds, in association therewith, rales at the corresponding apex and a dullness at the corresponding base. But there is no mention of any percussion of the spine itself.

On the strength of the conducting power of individual vertebrae, I was prepared to find a local spinal

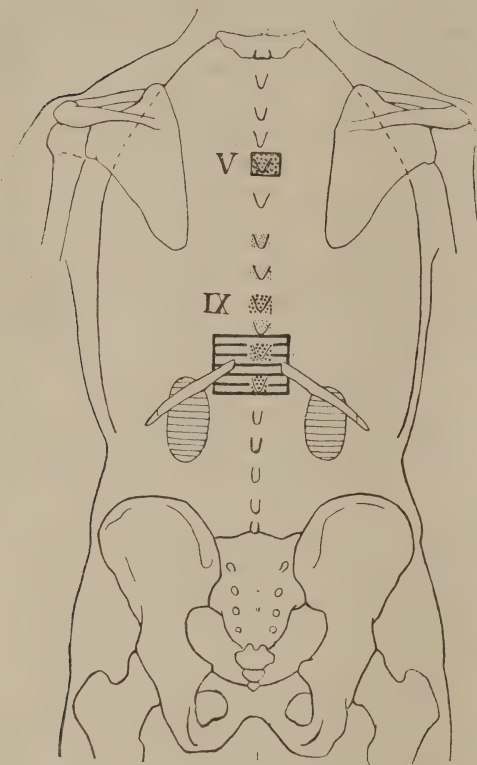


FIG. 7.

The lower dorsal dull patch due to pericardial effusion—showing its position below the level of the pericardium and of its contents.

prepared to find a local spinal dullness produced by enlarged glands, but I did not suspect, until I had established it by percussing a number of healthy chests, that the normal glands also yield a dullness. From this investigation came out the fact that the fifth dorsal spine is invariably duller than its neighbors, and that this dullness, as shown in the diagram, extends to the right over a small quadrilateral area, about 1" by $\frac{3}{4}$ ". Sometimes it shows a very slight extension to the left of the middle line.

This dullness of the fifth dorsal spine is absolutely normal and anatomical. A familiarity with it is an obvious essential for the appreciation of any abnormal dullness which may present itself.

I attribute the fifth spine dullness to the cessation at the level of the fifth vertebra of the resonant influence of the trachea and to the replacement of this resonant influence by the dulling influence due especially to the infratracheal glands in addition to other mediastinal structures, but, perhaps, distantly also to that of other solids in touch with them.

The practical value of an investigation of this dullness in a great variety of intrathoracic diseases, and particularly in scrofulous children and other subjects liable to glandular enlargements, need only to be mentioned.

THE LEFT AURICLE DULLNESS.

The post-cordial dullness is of obvious importance to the physician. It

confirms the results of our anterior examination, it enables us to demonstrate the absence of any great cardiac changes which would alter the normal area or degree of dullness. Lastly, a familiarity with the exact outline is our only means of discriminating from the post-cordial dullness those mediastinal and spinal dullnesses which we might, in our ignorance, have attributed to the heart.

The distance which intervenes between the dorsal surface and the ventricles and right auricle would seem to be an insuperable obstacle to any accurate definition of their size. This is not, however, the case, and modifications in the size of the heart are capable of being identified by careful pleximetry. It is obvious, however, that the most definite results will be yielded by that part of the heart which most closely approaches the spine, and any information that we may gain concerning it might be regarded as specially reliable. The part in question is the left auricle.

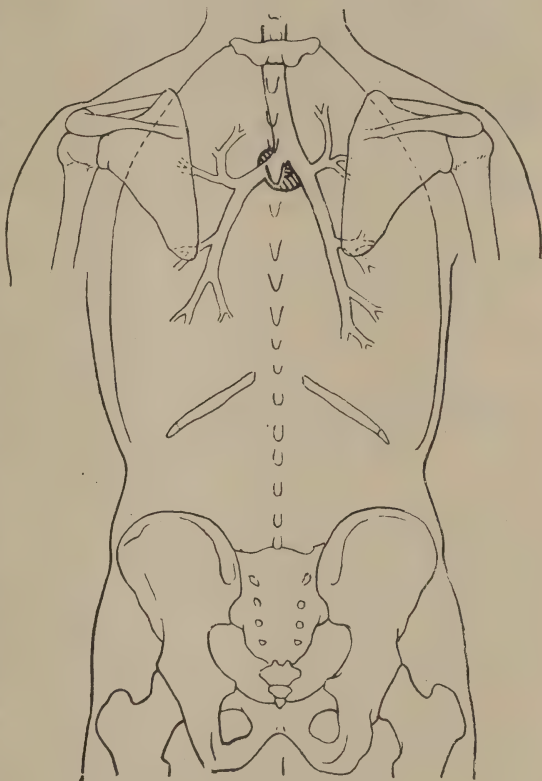


FIG. 8.

The normal situation of the bifurcation of the trachea and of the infratracheal glands which give rise to the fifth spine dullness (cf. Fig 5).

Had I been guided by a different method, that of anatomical surface markings as a preliminary to percussion, a recognition of the left auricular dullness would have been one of my earliest results. The method adopted has been throughout the opposite—the tracing of outlines irrespective of any anatomical guide and the subsequent verification by dissection. It thus happened that the fact that it is easy to percuss out the left auricle was one of my latest results. Although to attempt it appeared, at first sight, to be almost too great a refinement of percussion, the outline of the left auricle is usually, owing to its superficial portion, the most likely portion of the post-cordial dullness to be obtained with ease and accuracy.

The normal left auricle dullness (cf. Fig. 4) is of semilunar outline, convex upward, placed almost symmetrically across the middle line, sometimes extending a little further to the right than the left, resting on the hepatic line as a base and extending vertically from about the eighth to the ninth spine. It is surrounded above and on both sides by the much less marked dullness belonging to the rest of the cardiac area. The resonance of the eighth and ninth spines is considerably affected by it, and the ninth spine in particular is always comparatively dull. I can confidently recommend students to practise this percussion, for whosoever has once succeeded in identifying it will experience no trouble in always finding it, its dullness being greater than that of any other part of the post-cordial outline.

The value of this examination is great, for the left auricle is liable to considerable variations in size, and in mitral stenosis to great dilatations.

BACTERIOLOGY: ITS PRACTICAL VALUE TO THE GENERAL PRACTITIONER.

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To the general practitioner, bacteriology is offering a constantly increasing field of usefulness. From its earliest days, this science has suggested a theoretical basis for treatment, while it has developed, especially during more recent years, numerous products of practical remedial value. For the most part it has not been difficult for the physician to avail himself of these advances in treatment. The methods founded upon theory have been particularly popular, and it has been only necessary for the micro-organismal nature of an affection to gain credence in order to have innumerable preparations of real or fancied antiseptic value pressed into service.

From the earlier vague and theoretic means of combating bacterial invasion, we are now emerging upon a more rational therapeutics, founded upon laboratory investigation and endorsed by clinical trial. Although preventive inoculations and the use of toxins and antitoxins have been adopted with some reluctance, their application is not difficult and their employment is now becoming general. Coincident with the recent advances in etiology, prophylaxis and therapeutics, and scarcely less important, are the strides made in bacteriologic diagnosis and prognosis. And yet, despite the great value of these latter innovations, it is entirely probable that bacteriology has been of far greater service to the practitioner in the line of treatment than in diagnosis. The scratch of the vaccine lancet or the

thrust of the antitoxin needle requires neither erudition nor great technical skill, while indulgent manufacturers beg to supply the practitioner with more convenient and refined products. On the other hand, unfortunately, the methods of diagnosis have not only required laboratory training but also laboratory apparatus.

These difficulties are being largely overcome in the medical centers by the establishment of municipal laboratories, but in the more remote districts the general practitioner is left, as usual, self-dependent. There is, moreover, a prevalent impression that the general practitioner requires but little knowledge of bacteriology. This needs correction. The specialist is a man who, by exceptional proficiency in a single branch, is exempted from a thorough knowledge of general medicine. Serving in a single field, he exacts service from his confreres in all others, including that of skilled laboratory workers. The true position of the general practitioner is, naturally, quite the reverse, and with the knowledge that "diagnosis is treatment," bacteriology must be far from the least of his many accomplishments. He may therefore rejoice in the fact that some of the most important of bacteriologic methods now require but simple apparatus, are capable of rapid performance and demand no exceptional skill. Given a good microscope, which may now be considered an essential part of the practitioner's outfit, a very moderate additional expense will provide the essential equipment for many of the very important diagnostic tests. Indeed, it is now possible without any aid from the microscope and with no more complicated apparatus than a test tube, to determine the presence and activities of typhoid bacilli in the body; and thus, by a procedure scarcely more difficult than the test for sugar in the urine, diagnose the existence of enteric fever. The single example may serve to illustrate the error of a prevalent opinion that bacteriology is hardly accessible to the practitioner as an aid in his daily work.

In this article I desire to mention a number of the practical advances in bacteriology and to indicate how much of essential value in the various fields they offer to the progressive physician. Certain of these advances may never have a general use; others are as yet very imperfectly developed; improvements may be expected upon all; yet we do our patients an injustice if we do not avail ourselves of some of the present benefits. It is convenient to group the bacteriologic advances under the general headings of *Etiology, Diagnosis, Prognosis and Treatment*. In attempting this, no excuse is offered for mentioning much that is trite to many medical readers.

Etiology.—On referring to the causal relations of bacteria to morbid conditions, we find that there is a large number of diseases for which microorganisms may reasonably be claimed as the inducing factors; a considerable number for which certain bacteria have been described as the etiologic agents, and—until within a very recent period—but a very moderate num-

ber of which definite bacteria have been satisfactorily established as causal. Under this latter class we now have such prominent bacteria as Koch's bacillus of tuberculosis, Eberth's bacillus of typhoid fever, Klebs-Löffler's bacillus of diphtheria, Koch's spirillum of cholera, Neisser's diplococcus (gonococcus) of gonorrhea, Nicolaier's bacillus of tetanus, Obermeier's spirillum of relapsing fever, and Kitasato's bacillus of plague. Scarcely less important and also well authenticated is the bacillus anthracis of malignant pustule, bacillus mallei of glanders, bacillus leprae of leprosy and the streptothrix (?) (ray fungus) of actinomycosis, and of madura foot. To these should be added the well-recognized micro-organismal causes of septic and suppurative conditions—such as the varieties of staphylococci, so frequent in abscesses; the streptococcus found in erysipelas; the bacillus pyocyaneus of green pus; the bacillus coli communis, frequent in abscesses adjacent to the intestines; the bacillus aerogenes capsulatus, found in a usually fatal form of sepsis associated with gaseous edema, etc.

Nearly all of these organisms have been proved to be the specific causes of their respective diseases by conforming to the well-known rules of Koch. That is, the organism is found to be constantly present in the bodies of those affected by the disease, may be grown in pure culture outside of the body, when properly inoculated in lower animals it reproduces the disease, and may again be recovered from the animal so infected.

There are also good reasons for accepting a number of other organisms as specific. Recent investigations corroborate the claims of Sanarelli that his bacillus icteroides is the cause of yellow fever.

The bacillus described by Canon and Pfeiffer for influenza, and by Canon and Pielicke for measles, are generally accepted. The Lustgarten bacillus of syphilis has not been sustained, but van Niessen claims to have cultivated from syphilitic blood a bacillus producing characteristic lesions in pigs and monkeys.

The claims made that the bacteria causing mumps, scarlatina and whooping-cough have been isolated, do not, as yet, appear conclusive; while the organisms of such notably infectious diseases as typhus and small-pox await discovery. The better knowledge of the bacteria producing the infections has been fruitful in improving hygienic measures—a subject too extensive to be considered at this time. Not less important have been the reflections of etiologic advances in improvements of diagnosis, prophylaxis and treatment.

Bacteriologic Diagnosis.—Having ascertained that a micro-organism is invariably found in the body in association with a single disease and with that disease only, the diagnosis of the disease may readily hinge upon the determination of the presence of the bacterium. The chief methods used to determine the character of a micro-organism, and thus diagnose the disease, depend upon: (1) Peculiarities in form and arrangement; (2) peculiarities of staining; (3) peculiarities of cultural growth; (4) pecul-

iarities of effects produced when introduced into the bodies of certain animals; (5) peculiarities in behavior of cultures of the micro-organism when brought in contact with certain fluids from the diseased animals.

Certain of the higher forms of the vegetable parasites, especially the parasitic moulds and yeasts, are readily recognized by their peculiarities of form alone. For example, the *saccharomyces albicans* of thrush and the varieties of *aspergilli* found in the external ear are readily determined by microscopically examining some of the suspected material in a drop of an indifferent fluid; while an accurate diagnosis of the varieties of ringworm, of favus, of *tinea versicolor*, may be obtained by removing some of the affected epithelial scales and hairs and examining under the microscope for their respective moulds, after treating with alcohol and ether, and strong caustic potash to remove the fat.

The similarity between different varieties of bacteria is so great, however, and pathogenic micro-organisms are so frequently aped in shape and grouping by the benign varieties, that this first method of diagnosis, as a rule, is merely corroborative to staining and cultural methods. Thus the most noteworthy peculiarity of the tubercle bacilli is their resistance to decolorizing agents; and yet it is also very important that the organisms appear as short rods, with rounded ends, a slight curve and a tendency to be arranged in II, V or X like figures. The simple method of diagnosing this bacillus by staining has proven of chief value in tuberculosis of the respiratory tract, the presence of tubercle bacilli in the sputum being practical proof of the existence of the disease. The same method of diagnosing tuberculosis in other parts of the body has given less satisfaction. In tuberculosis of the genito-urinary tract, it is often difficult to find the bacilli in stained preparations of urinary sediment, and the bacilli are rarely seen in the pus from tuberculous abscesses. Although sputum that has become putrid may continue to show the characteristic bacilli, it is advisable to make preparations of fresh fluids. Urine, especially, should be speedily centrifuged and examined, and it is probably an advantage to use a method which obviates certain of the extraneous urinary substances. While the smegma bacillus and the leprosy bacillus resemble the tubercle bacillus in staining properties, it is to be recalled that both of the former bacilli stain more rapidly, decolorize more easily and have different grouping tendencies than the latter. The failure to find tubercle bacilli, of course, does not necessarily negative the presence of the disease, nor may the number of bacilli found bear any relation to the extent of the disease process.

Gonorrhea, at present, is most accurately diagnosed by staining. The organism, which is a rather large diplococcus with flattened surfaces in opposition, and a tendency to be found in groups in or upon the cells, is differentiated from most other diplococci by failing to stain by Gram's method, although readily coloring with the ordinary basic anilin dyes. In

subacute or chronic cases the gonococci, having invaded the deeper epithelial layers, may be absent from the discharge except during exacerbations. It has, therefore, been suggested that in gleet of obscure nature the "Beer Test" be used; the visit to Bacchus being frequently rewarded by the return of the gonococcus to the discharge.

The staining of cerebro-spinal fluid withdrawn by the lumbar puncture has been a decided aid in diagnosing certain varieties of cerebro-spinal inflammation. The diplococcus intracellularis meningitidis of Weichselbaum, frequent in the epidemic and very fatal form, resembles the gonococcus by its presence in the leucocytes and by being decolorized by Gram's method. The diplococcus of pneumonia has also been found in the fluid of many of the fatal cases.

In the diagnosis of gastric carcinoma probably the most suggestive addition to the stomach contents, apart from the presence of detached bits of tumor, is the long immobile, club-shaped Oppler-Boas bacillus.

The most important recent advance in the diagnosis of puerperal sepsis is the employment of bacteriologic methods to ascertain the variety of the infecting organism. The fatal infections with the gas bacillus (bacillus aerogenes capsulatus of Welch) and with the septicemia-producing streptococcus should be carefully separated from the milder infections by the colon bacillus and the staphylococcus and the usually localized gonococcus invasions. A sterile glass tube may be inserted into the uterine cavity, some of the lochia withdrawn into the tube, and the tube ends sealed pending the examination of the contents.

In general surgery the value of staining the fluids from infected foci, even during the operation, in order to determine the necessary operative procedure, has not diminished, although the method is not new.

Certain bacteria exhibit, under varying conditions, alterations in their staining properties. Such bacteria may be more distinctively stained after cultivation upon a particular medium. This is so important with the diphtheria bacillus that the diagnosis is made by staining after cultivation upon Löffler blood-serum mixture. The rapid growth, at incubator temperature, of the irregularly rounded, elevated, porcelain white colonies tending to rapidly coalesce into a diffuse smeary layer, is also quite characteristic of this organism. Elsner, Kashida and Hiss have devised special media¹ for developing characteristic cultures from the typhoid bacillus, but their practical diagnostic value can hardly compare with the simple method of serum diagnosis. Cultures, at present, are of chief value to the practitioner in diagnosing diphtheria, and those who have not the advantage of a laboratory may procure the necessary media, and with a little training make their

¹ Piorkowsky (*Ber. klin. Woch.*, 7, 99,) has recently recommended a medium composed of normal urine containing 0.5% peptone and 3.3% gelatin. The medium is inoculated from the stools, and incubated 20 hours. The typhoid colonies appear as colorless spots of radiating threads, while the colon cultures are sharply-defined, round, yellowish colonies.

own examinations. In lieu of an incubator the inoculated tube, in a protecting case, may be carried in an inner pocket, the body supplying the necessary warmth.

Animal inoculations have proven useful in diagnosing genito-urinary-tuberculosis in cases where the bacilli were not shown by staining. Some of the fresh urinary sediment (obtainable from a single kidney by the ureteral catheter) is injected into the abdominal wall of a guinea pig that is killed after five weeks and examined for tuberculous lesions. Animal inoculations are also of value in diagnosing the type of many of the infections; while the subdural inoculation, in a rabbit, of a bit of the spinal cord of the affected animal remains the best method of ascertaining the existence of rabies.

One of the greatest advances in bacteriologic diagnosis is that dependent upon the tendency of the bacteria of a given disease to agglutinate, or collect in clumps, and to lose their motility when brought in contact with the serum from a person affected by the disease. Although this method is useful in determining the variety of the bacteria, the presence of infective organisms in drinking water, etc., its greatest value has been in diagnosing disease.

Being present in over ninety-nine per cent. of cases of typhoid, it is the most useful diagnostic sign yet discovered. The method has not been as thoroughly developed in other diseases, but has shown a value in aiding the identification of cases of cholera, glanders, Malta fever, tuberculosis, leprosy, relapsing fever and other diseases. Considering that the method is yet in its infancy, the results obtained have been surprisingly accurate. The test is performed with or without the microscope, the former having the advantage of quickness and greater accuracy. The main difficulty that the practitioner will find with this method is the difficulty of keeping on hand fresh cultures of the bacilli. The advantages of emulsions of dead bacilli are readily apparent, but thus far they have proven less reliable than the fresh cultures.

A final, simple and practical method of diagnosis is by the injection of bacterial products into the affected animal. Tuberculin, a glycerin extract of tubercle bacilli, has proven to be a most reliable agent for diagnosing tuberculosis. Unfortunately, its tendency to exacerbate this affection has largely precluded its use in the human family. Mallein has also proven successful in diagnosing glanders in horses.

Prophylaxis and Treatment.—Two main classes of bacterial remedies have been developed, namely, those obtained directly from the micro-organism and those indirectly obtained by the action of bacterial products upon animals. To the first class belong the toxins and vaccines; to the latter class the antitoxic and bactericidal serums. The former have been of chief value as prophylactic and immunizing agents, but, as yet, have not

revealed the curative powers of the latter class. Upon the other hand, the antitoxins have more transient immunizing powers than the toxins or vaccines. Protective inoculations or vaccinations are now accessible to the practitioner for small-pox, anthrax, cholera, plague, hydrophobia, and for a number of diseases of the lower animals—as black leg (symptomatic anthrax), hog cholera, etc.

The curative effect of the bacterial products of the tubercle bacillus devised by Koch have hardly proven commensurate with their dangers, while the employment of Coley's mixed toxins of prodigiosis and erysipelas for the relief of inoperable malignant tumors has been followed by a cure only in occasional cases. The antitoxins have shown temporary but valuable immunizing powers in diphtheria and tetanus, and the diphtheria antitoxin has revealed marked curative powers—much greater, indeed, than that of tetanus.

The use of streptococcus antitoxin has been followed by good results in certain cases of sepsis and even small-pox. The results suggest the desirability of greater accuracy in diagnosing the variety of the infecting organism as an aid to the proper treatment.

With a prospect for the future of increased and simplified diagnostic advances, and multiplied and more efficient curative products, the advantage of a more thorough knowledge of bacteriology to the practitioner are not easily overestimated.

The Demonstration of the Tubercle Bacillus in the Feces. Rosenblatt (*Centralbl. für inn. Med.*, 1899, No. 29; *Settimana medica*, July 29), noting the difficulty of finding the tubercle bacillus in advanced cases of intestinal tuberculosis, owing to the fluidity of the stools with which the bacilli are mixed up, conceived the idea of administering tincture of opium until the stools become solid and formed. The micro-organisms are then sought for solely on the surface of the feces, where, it is said, they can be found without difficulty.—*N. Y. Med. Jour.*

The Climatic Treatment of Phthisis. Richer (*Can. Med. Rec.*, July, 1899) formulates the following rules: (1) Lymphatic and glandular forms of the disease, may derive a certain amount of benefit by open air mountain life, but are more likely to improve by a prolonged sea trip. (2) Incipient pulmonary forms, and some of the cases where softening is just commencing, which, according to the district in which they live, may be sent either to the Adirondacks, Gravenhurst, or the Laurentians. (3) Far advanced cases, where softening is marked in one or both lungs, with more than one cavity, had better be kept at home under appropriate sanitary regime, as their presence in a sanatorium exercises a demoralizing influence upon the other patients. These latter cases should be especially cared for in a city hospital, conducted upon the same principles as our civic infectious hospitals, and at the expense of the City, or State, or both.

CLINICAL LECTURE.

CAUSES OF URINARY RETENTION IN THE MALE: ITS TREATMENT.¹

BY ORVILLE HORWITZ, M.D.,

Professor of Genito-Urinary Surgery in the Jefferson Medical College, Philadelphia.

THE age of a patient is frequently a guide to the cause of retention of urine in the male; for instance, should one be called to see a child suffering from this disease, the first question should be, "What is the age of the patient?" If the reply be that it is a new-born infant, you would know at once that the condition arose from one of three causes: First, a contracted phimosis; second, an imperforate meatus, or, third, a congenital cyst of the sinus pocularis; thus, by simply ascertaining the age of the patient, the probable cause of the trouble would be known, as well as the instruments that it would be necessary to carry with you.

Should the patient be between the ages of eight and thirteen, and if he had been the victim of an attack of fever, from which he was convalescing, you may be pretty sure that the retention arises from debility, and, in all probability, will be relieved by the introduction of a proper sized sterilized rubber catheter.

Should there be no known cause for the condition, it will generally be found to be due to the lodgment of a foreign body in the urethra, and a suitable instrument for its extraction will be necessary.

If the patient be between the ages of seventeen and twenty-five, the most likely cause will be found to be of gonorrheal origin, in which condition there would, of course, be a corresponding history of the case. There would be found to be a frequent desire to urinate, accompanied by a burning pain at the neck of the bladder; these conditions precede an attack of retention. To relieve this variety of retention, the canal should first be irrigated with a warm solution of the permanganate of potash, not stronger than 1:2,000. A sterilized soft rubber catheter (Jacque's) should then be introduced, and the urine drawn off. A hot bath should be then prescribed, when the patient is to be wrapped in blankets and put to bed; then ten grains of quinin with a quarter of a grain of morphia administered, under which treatment the individual will perspire freely. The diet should be of light, easily digested food, and the bowels should be kept in a regular condition.

Between the ages of twenty-five and forty-five, the ailment is usually due to stricture. If retention be due to this cause, the filiform bougie is the first instrument to be employed. Should it pass freely on to the bladder, it may

¹ Clinical lecture delivered at the Philadelphia Hospital, January 14, 1899.

be fastened *in situ*; the individual given a hot bath, to be followed by the administration of a full dose of quinin and morphia, with a hot lemonade, and the patient placed in bed, when it will be found that the bladder will be slowly emptied.

Should the bladder be much distended, and should the patient suffer much pain, an effort should be made to pass a Ganley tunneled catheter over the fliform, in order to evacuate the urine with the least possible delay. If this procedure fail, the bladder must be aspirated. In some cases of impassible stricture delay is dangerous, and an immediate operation is indicated. The operation to be performed will depend upon the character of the stricture, its location, and the condition of the urethra.

When the patient is over sixty years of age, retention of urine is usually caused by an acute inflammatory condition of the prostate gland, which has undergone senile hypertrophy. If the patient is seen soon after he has begun to feel the pain arising from retention, and has not already made numerous efforts to pass a catheter into his bladder, a small, soft rubber catheter may be successfully introduced. Should the middle lobe of the prostate be markedly enlarged, a Mercier's elbow catheter is the one to be chosen. When the obstruction is caused by the enlargement of one of the lateral lobes, the "rat-tail" catheter is the one to be employed. In some instances, where it is impossible to insert a rubber instrument, an over-curved metal catheter will be found to pass readily. When it is possible to insert a rubber catheter, it is well to leave it in position for the space of four days; in this way continuous drainage is achieved.

Should it be impossible to pass any instrument, the bladder may be aspirated, the patient given a hot bath, besides a full dose of quinin and bromid of soda, and kept in bed. Under this treatment, the chances are that by the time urine has again accumulated in the bladder a catheter may be successfully inserted. Should instrumentation per urethra again fail, aspiration must be once more resorted to. When the case of retention of urine is of long standing, and fruitless attempts have been made to draw it off, and when the prostate gland has been injured, accompanied with free hemorrhage from the urethra, the patient being physically below par, immediate suprapubic cystotomy is the proper course to pursue. If the bladder be much distended, the operation is very simple, and can be readily performed in a few minutes. In the number of cases of this kind on which I have operated, the results have been most gratifying, having never lost one.

The American Association of Obstetricians and Gynecologists will hold its twelfth annual meeting in the Assembly room of the Denison House, Indianapolis, Ind., Tuesday, Wednesday and Thursday, September 19, 20 and 21, 1899.

TALKS TO GENERAL PRACTITIONERS.

THE LOCAL TREATMENT OF CORNEAL ULCER.

BY WALTER L. PYLE, M.D.,

Assistant Surgeon to Wills Eye Hospital, Philadelphia.

THE first step in the treatment of corneal ulcer is to put the affected eye completely at rest with a light bandage (preferably a single Liebreich), and the instillation of atropin solution (gr. j to f3ii) three times a day. In this way photophobia and lacrimation, from exposure to light and air, are avoided, and movements of the eyeball, constantly rubbing the sensitive denuded corneal surface against the roughened conjunctiva of the lids, are prevented. In some cases it is necessary to apply considerable pressure to attain this end. The atropin sets the accommodative apparatus at rest, dilates the pupil and lessens the liability of the iris and ciliary body to become involved; in fact, it has an antiphlogistic action on the whole anterior segment of the eyeball. The next procedure is the cleansing and disinfection of the cornea and conjunctiva. In mild cases with slight conjunctival involvement, a wash of boric acid (gr.x to f3i), used every two hours, may suffice. If the infection is intense, or if the conjunctiva is greatly inflamed, a 50% glycerite of boroglycerid may be used in addition morning and evening, taking care that it smears over the denuded cornea. In order to be assured that applications reach the ulcer, the patient should be told to look down; the upper lid is drawn up and away from the eyeball, and the solution or powder is placed on the conjunctiva above the cornea. The eyeball is rotated upward by immediate reflex action, and the whole surface of the cornea is thus covered with the application.

Mercuric chlorid (1-5,000) and formalin (1-2,000 to 1-1,000) may be used as disinfectants. Recently, holocain in 1% solution has been employed with great success in corneal ulcers. It is both antiseptic and anesthetic. Pyoktanin is used in 1-2,000 to 1-1,000 solution, but is only feebly antiseptic. Toluidin blue, a member of the anilin group, closely allied to methylene blue, has been employed as a collyrium in strength of 1-1,000. It is a very effective antiseptic, is not irritating, and has the advantage of outlining, in a blue stain, all corneal abrasion. Astringent solutions containing lead, silver or zinc salts should not be used, as they may cause greater opacity by metallic deposition.

Iodoform is a most valuable remedy in almost all forms of corneal disease, and is also used to diminish corneal vascularity and in clearing up corneal opacities. It may be dusted upon the eye twice daily in very fine powder, or applied as an ointment, with or without massage in strength of one-half

to one dram to the ounce. Atropin may be conveniently incorporated in this ointment as follows:

Atropin sulphate,	gr. $\frac{1}{4}$
Iodoform,	gr. xv
Vaselin,	3ij

After dusting iodoform on the cornea, the upper lid should be pulled down and over the cornea and held in place for a few minutes; otherwise, movement of the lid or eyeball will brush the powder off the cornea. The substitutes for iodoform, such as nosophen, antinosin, and xeroform, have not been sufficiently tried to warrant their general use. The only objection to iodoform is its odor.

Calomel is used in very fine powder in small indolent ulcers, and particularly in phlyctenular disease. It is also employed in pannus and in **chronic keratitis**. It should not be used if any preparation of iodine is being taken internally, or if there is ciliary irritation. Applications should not be made more than twice a day.

The yellow oxid of mercury is occasionally used, but is of greater value after the ulcer has healed. Its use then may lessen the subsequent opacity. It should not be prescribed in greater strength than gr. $\frac{1}{2}$ to 3i.

Cassaripe is a concentrated semi-solid juice of the cassava plant of the tropics. A 10% ointment is sometimes of use in purulent keratitis.

If there is much pain and congestion, moist hot compresses every two hours for twenty minutes are of great benefit. Not only are they grateful to the affected parts, but they lessen pain, hasten healing, and arouse a general reaction. The compresses may be moistened in heated boric acid solution and wrung out and applied as hot as can be borne. If the pain and congestion are quite intractable, good results are obtained by the application of three or four leeches to the temple of the affected side, or the Heurteloup artificial leech may be used. In urgent cases, local bleeding may be effected by making three or four superficial incisions in the skin of the temple and drawing the blood by the ordinary cupping glasses. Persistent pain points to irido-cyclitic involvement. Ice compresses or cold applications should not be used in simple corneal ulcers. The cornea is an avascular structure, and cold will only retard the vascular changes by which the ulcer is healed. Of course, in traumatic cases, and in those dependent upon purulent conjunctivitis, it is often necessary for other reasons to use ice compresses, even though the cornea is affected; but, as a general rule, heat should be used in inflammations of the cornea and iris, and cold in the inflammations of the conjunctiva and eyelids.

A treatment that has been used recently with good result is hydraulic curetment. A fine stream of a feebly antiseptic solution is directed at frequent intervals and with considerable force, by means of an Anel's syringe, against the infected corneal area.

If the ulcer resists all treatment and is progressive, the whole of infected

surface should be cauterized by a heated probe or galvano-cautery at dull red heat. This valuable procedure has saved many infected corneas.

If perforation seems imminent, it is desirable to hasten it by paracentesis through the floor of the ulcer, as experience has shown that perforated ulcers heal quickly. After perforation the eye should be cleansed with boric acid solution and a pressure bandage applied continuously for twenty-four hours. If the perforation is central, atropin should be instilled; if it is peripheral, eserin is indicated. If part of the iris prolapses, it should be drawn from the wound and excised.

In very severe cases of serpyiginous ulcer, in which all hope of preserving vision is gone and even the eyeball is despaired of, Saemisch's operation is indicated. The whole cornea is bisected through the abscess-region. Any adherent pus or hypopyon may be removed with a small curet or iris-forceps. The wound should not be allowed to close as long as the disease is active.

An important feature in the treatment of severe corneal ulceration, sometimes overlooked, is disinfection of the lacrimal passages. Any co-existing lacrimal catarrh must be treated and any lacrimal obstruction opened, or the ulcer may not heal until the eye is lost. Persistent irrigation with a weak mercuric chlorid solution (1 to 10,000) is an advisable procedure in such cases.

If atropin is not well borne and seems to aggravate the conjunctivitis, it should be stopped and one drop of scopolamin solution (gr. $\frac{1}{8}$ to f3ii) used three times a day.

If there is much conjunctival or lacrimal secretion, the bandage must be dispensed with and smoked glasses substituted. In such cases, the eye should be cleansed thoroughly at very short intervals.

When the ulcer heals the subsequent opacity may be massaged twice daily with a weak yellow oxid or iodoform ointment. The younger the patient the more hope there is of clearing up the opacity; however, in adults, persistent treatment over a number of years may bring about slow, but, nevertheless, decided improvement. Vascular keratitis or pannus is very intractable. If massage with ointment fails, inoculation with jequirity or peritomy may be tried, but with little hope of visual improvement. Electrolysis has given no definite results, and is seldom advised. Corneal implantation is useless.

Premature Death in Russia. Prof. Sikorski quotes the following statistics in a paper read before the Society of Psychiatry of Kieff: During the last 18 years there died in European Russia: Killed by wild beasts, 1,246 persons; killed by lightning, 9,009; burned, 16,280; poisoned, 18,000; frozen, 22,150; suicide, 36,000; killed by weapons, 51,200; died from alcoholism, 85,200; drowned, 124,000.

THE USE AND ABUSE OF THE DOUCHE.

BY D. BRADEN KYLE, M.D.,

Clinical Professor of Laryngology, Jefferson Medical College, Philadelphia.

IN the treatment of diseases of the nasal mucous membrane, it is frequently necessary to employ solutions for the purpose of freeing the surface of retained secretion. This solution can be best applied by means of an atomizer or douche.

The solution used may be considered from two standpoints: First, that of cleansing; and, second, for the local therapeutic action of the cleansing solution.

The indications for the use of the douche are determined by the character of the secretion, irregularities within the nasal chambers, and whether the process is an acute or chronic one. The nasal irregularity is often more of a contra-indication than an indication. If the irregularity is so located as to direct the flow or current of the cleansing solution toward the orifice of the Eustachian tube, by suction due to forcible inhalation on the part of the patient, the fluid will most certainly be drawn up into the tube. In some individual cases I think some of the bad effects charged to the catarrhal inflammation are really due to the irritating effect of the solution used. In all cases the patient should be instructed to allow the cleansing solution to flow through the nasal cavity, and under no circumstances to use suction.

Another point in the use of the douche I think is often overlooked. The patient usually permits the cleansing solution to flow through the nostril for a few minutes, then attempts to clear the nostril by forcibly blowing the nose before the cleansing solution has had sufficient time to moisten and soften the retained secretion. The irritation produced by this forcible blowing aggravates the condition. The patient should be warned on this point, and the blowing of the nose be forbidden for ten or fifteen minutes after the use of the cleansing solution. By that time the stimulating action caused by the passing of the solution over the mucous membrane will have increased the flow of mucus, and that, combined with the use of the douche, will soften the retained secretion and render its removal comparatively easy.

Frequently much harm is done by the patient using too much of the fluid. The passing of so much fluid over the membrane while cleansing it acts as an irritant and causes the very irritation you are seeking to relieve. The temperature of the fluid used varies with individuals, but the fluid should be as warm as can be comfortably borne by the patient. The delicate mucous membrane of the nose, in its normal condition, requires no douche, and frequently where the inflamed area is a localized one and the douche is ordered, its irritating effect on the surrounding healthy membrane is sufficient to produce and keep up a continued inflammation in that

otherwise healthy structure. This brings up the question of length of time the douche should be used. As to time, no definite rule can be given, but this one point must be remembered—that if the douche is used too long or the solution used is too irritating, it will keep up and aggravate the very condition you are trying to relieve. I do not believe in the use of strong solutions as a douche, and it is a good plan at least every ten days or two weeks to discontinue the douche for at least four or five days, which will determine whether or not any irritation is being kept up by its use.

If the patient complains of marked irritation, after the use of the douche, of headache, pain in the ears and a general sensation of having taken cold, *stop the douche at once*.

Of the alkaline, slightly detergent and dissolvent solutions, I know of none better than

℞ Sodii bicarbonatis,
Sodii biboratis,
Sodii chloratis,
Potassii bicarbonatis, aa gr. vi
Aqueae distillatae, fl. ʒj

Another admirable solution, which will allay irritation is:

℞ Extracti hamamelidis (aqueous),
Aqueae distillatae, aa

used at a temperature which can be comfortably borne by the patient. This is an admirable douche in acute processes and following operations. The alkaline solution given above should never be used in acute processes, but in the chronic only.

Lead Dioxid in Urine Analysis. Cloudy or fermenting urine, which is usually difficult to filter bright, may be rendered perfectly limpid by the use of lead peroxid, as suggested by Loubiou. Ten c.c. of the urine to be examined are treated with a few drops of phenol-phthalein solution, a little normal soda solution is added until a faint pink color is produced. One gm. of lead peroxid is then added and the mixture is briskly shaken for about a minute, then filtered. A few drops of Tanret's reagent is added, and the mixture is boiled. In the presence of albumin more or less opalescence is produced, according to the quantity of that body present. Quantitative experiments show that the dioxid is without action on albumin in neutral solutions.—*Bull. de la Soc. de Pharm. de Bordeaux*. [*Pharm. Jour.*]

SOME POINTS IN RELATION TO SYPHILIS.

BY J. D. THOMAS, M.D.,

Professor of Genito-Urinary Diseases, Western Pennsylvania Medical College;
Genito-Urinary Surgeon to the South-Side Hospital, Pittsburg, etc.

IN my last "talk" I stated that during the primary stage of syphilis the blood did not contain the germs of the disease. This is demonstrated in the law of Diday, which is, that the child is not syphilitic if the mother acquires her chancre not earlier than the seventh month of utero-gestation; or, in other words, the child is born before the mother's blood becomes contaminated. In a case like this, the child may acquire a chancre in passing through the maternal parts, but the disease would not then be hereditary. The same fact can be observed in a patient with a chancre upon the penis when auto-inoculation is afterward (two or three weeks) practiced, say on the finger. The chancre on the finger will proceed to mature, but as soon as the poison from the penis chancre enters the circulation the finger chancre aborts, owing to the precedence of the chancre on the penis.

Another law, that of Profeta, is that if the mother acquires a chancre at any time after conception the child escapes. This is based upon the teaching of physiology that there is no communication between the maternal circulation and that of the fetus. This, however, is a disputed point; but, even if it were true, there are so many accidents, though trivial in their character, such as slight separation of the placenta or some other pathologic change in the attachment of the ovum, that the blood of the mother may enter directly into the circulation of the fetus; hence the child runs many chances of being syphilitic.

Experimentation by inoculation proves to a certainty that the *natural* secretions of the body do not contain the germs of syphilis. The spermatozoon and ovum are normal secretions.

It is held by some that the semen of a syphilitic father can infect the ovum in the *healthy* mother—the ovum being syphilitic and the mother escaping. As the sperm does not contain the poison, such an occurrence is impossible. If the husband is a syphilitic and procreates a syphilitic child, is it not probable, under the circumstances, that the wife is also syphilitic? For during all this time the parties are indulging in coitus, and it is probable that mutual abrasions about the genitals may occur at times, when transmission of the disease would take place. That a mother may go through a mild syphilis without her knowledge is not surprising. Indeed, she may place herself under the care of a physician during her secondary eruption from a feeling of malaise, which she may experience, and the physician fail to recognize her true trouble. This is not a mere supposition, for we meet with just such cases. These mothers that give birth to syphilitic children,

but themselves present no evidence of the disease, are never infected by their own offspring, although suckling them while fissures exist about the nipples. This law is called the law of Colles.

Another fallacy to balance the preceding one is where the ovum is said to be infected by the father. Then the ovum is supposed to infect the mother without the production of a chancre—syphilis by *choc-en-retour*. The mother, in such a case, would appear not to be a factor in her relations with the syphilitic father.

A non-syphilitic mother never gives birth to a syphilitic child, and, as a corollary, a hereditary syphilitic child is always the offspring of a syphilitic mother.

Syphilis, like all other eruptive diseases, has a clinical limit; and, again, like the other eruptive diseases, its sequelae may be unlimited. Syphilis loses its contagious character in less than four years; its sequelae *may* last as long as the patient lives. In cases thoroughly treated it may lose its contagious character in one year; this clinical fact we know from occasional observation, wherein some of our patients, against advice, marry at this early period, but do not infect their wives, and hence have healthy children. The far limit of the contagion we know from observation; but its near limit in individual cases we are unable to settle. If any of the lower animals were susceptible to the disease we could, by experimental inoculation, tell each patient when the disease had lost its contagious character, and thus be enabled to state how soon the marriage relation might be entered upon.

Mr. E——, being already the father of several children, in the summer of 1885 contracted a chancre from which Mrs. E—— contracted the disease. On March 3, 1886, Mrs. E—— gave birth to a child, which died in five months from hereditary syphilis. On May 3, 1887, she gave birth, at full term, to a macerated and, necessarily, dead fetus. On August 31, 1888, a healthy child was born. On February 17, 1890, on May 3, 1894, on August 16, 1897, and on February 20, 1899, healthy children were born. These five children have never shown any symptoms of syphilis. The family has been under my exclusive professional care (confinements included) during all these years, so that my opportunities for observation are perfect. In this instance, the mother ceased to convey the disease in less than three years. I could relate numerous similar cases from my notes bearing upon this subject, but this case suffices to enforce what I desire to impress.

My records show that non-syphilitic men have intercourse regularly with women subjects of syphilis acquired three or more years before the beginning of the liason, and remain free from the disease; also women delivered of healthy children and at the time of parturition having breaking down tertiary gummata in the soft palate. Women in the tertiary (sequelar) stage of syphilis may give birth to dead children, but the children do not die from

syphilis, they die from some pathologic condition, due to tertiary accidents in the placenta interfering with the circulation to the fetus. If the accidents in the placenta had not occurred the children would not have perished; neither would they have been syphilitic.

When a woman, newly married, comes to me with syphilis, after marrying a man who had had syphilis three or four years before the wedding, I make bold to tell her that she did not acquire the disease from her husband, but from some fresher syphilitic.

When we know so well the clinical history of this disease we must not believe the statement of the patient when it is absurd scientifically. It is this credence that makes syphilis sometimes mysterious, weird and paradoxical. We must bring the same cold facts to bear in this disease that we do in the non-married female who is pregnant, but denies, by all the gods of Athens, having ever had intercourse with a man.

THE PROGNOSIS AND TREATMENT OF CHRONIC STHENIC GASTRITIS (ACID GASTRIC CATARRH).

BY BOARDMAN REED, M.D.,

Philadelphia, Pa.

THE great frequency and importance of this disease must be my excuse for discussing it more at length than the subjects hitherto under consideration in this series of talks.

In its incipency acid gastric catarrh is curable enough when the patient can be fully controlled, including his diet. When there exists merely an excessive secretion of the gastric juice, with only a slight involvement of the secreting glands, a correction of the faulty hygiene upon which it depends, with, and sometimes even without, a neutralizing of the abnormal amount of hydrochloric acid present in the stomach during digestion, by full doses of alkalies, will suffice to cure the affection completely and within a short time. Unfortunately, it is scarcely ever recognized in this stage, since it is so common to classify all the less severe gastric symptoms under the vague name of "dyspepsia" and dismiss such ailing patients with a routine prescription, given at a venture. But the longer this form of gastritis goes on, the more extensively does the mucous membrane of the stomach become involved. When it is fully established and the cell-proliferation has extensively developed, it is rare that the affection can be thoroughly mastered under six months or a year, even with the most skillful treatment, and with the loyal and persevering co-operation of the patient. Later on, when, as almost inevitably happens, the intestines have become involved in a secondary catarrhal process and nutrition has begun to suffer severely, as shown by

emaciation, anemia, loss of strength and nerve tone, and deranged cardiac action with hepatic enlargement or contraction, insomnia, and often some consequent disease of the skin, the difficulties in the way of a cure are vastly increased and the result must be much more doubtful.

The prognosis, then, it may be said, is good in the earlier stages, when the patient can afford, and is willing, to make the necessary sacrifices. If a brain-worker, he may have to abandon his business, or, at least, reduce the time devoted to it. He must certainly change his habits as to eating and drinking, and probably will have to reform unhygienic habits in other respects. Even advanced cases, with the help of such sacrifices and of the best possible treatment followed up for a long time—in the worst cases often for several years—may be restored to fairly good health in the end, though there are few diseases that tax more severely the patience and ability of the physician.

As to the treatment, it presupposes, as an absolutely indispensable condition, a few laboratory appliances and the ability to make a number of the chemical analyses of the stomach contents that have been described in previous talks.

As the diagnosis cannot be reached without the aid of the stomach tube and burette, so you will find it necessary to make the quantitative tests for free hydrochloric acid and for the total acidity, at least, in order to manage a case of this disease with any hope of success. For the dose of alkali that fails utterly to lessen the percentage of acidity in one patient, proving possibly so small relatively as even to stimulate the glands to a still more excessive secretion, may within a few days change, in another patient, the excess of hydrochloric acid into a deficiency. Not to be able to recognize this changed condition would risk a serious injury to the more sensitive patients.

By far the most important part of the treatment is the hygienic. You must, first of all, free the patient, so far as possible, from any existing mental overstrain, great worries, or sexual erethism. These are probably among the most prolific causes of hyperchlorhydria or excessive secretion of hydrochloric acid, which, when long continued, doubtless always results in chronic sthenic gastritis. According to my experience, when it is impossible to remove these disturbing influences, as unfortunately it often is, the patients do not get well.

Rapid and excessive eating and insufficient mastication of food are other prominent causes of the disease, and must be reformed altogether before there can be any possibility of a cure.

As to the kind of diet best suited to these cases, authorities differ widely. Probably a majority of them still recommend that patients be fed mainly on the albuminoid foods, including, especially, meat, eggs and milk, for the reason that these neutralize a far larger proportion of the acid than do

the starchy foods, and for the further reason that starch ordinarily is very imperfectly digested in these cases, thus leading to injurious fermentation.

These would seem to be weighty reasons—and at first unanswerable ones—but my own experience soon taught me that on a meat diet hyperchlorhydric patients were prone to grow worse instead of better, and various other specialists in gastric diseases record similar observations. And Hemmeter has demonstrated, beyond any question, that meat in animals is a powerful excitant to the gastric glands, largely increasing the secretion of hydrochloric acid. These observed facts would not settle the matter if it were true that starchy food could not be made to digest in such persons. But here again experience is worth more than theory, and it has shown that the most excessive acid secretion does not preclude us from giving, with certain precautions, a due proportion of carbohydrates or starchy foods. A physiologic diet—one that will sustain nutrition unimpaired for long periods—must include a preponderance of the class of foods to which starch and sugar belong, though the hydrocarbons or fats will help to supply any deficiency of these. On meat, fish and eggs, with even milk added, but without starch or sugar, an adult patient would ultimately suffer serious impairment of health. There is some sugar in milk, but not enough to sustain nutrition perfectly.

You can overcome the difficulty by having the starch partly pre-digested or caused to undergo artificially some of the chemical changes that finally transform it into grape sugar. This is done by heat in making toast or zwieback, and may be greatly promoted and hastened in the stomach by administering with the starch some of the various diastasic preparations, including the one known as Taka Diastase, which is quite active. When, by giving moderate doses of calcined magnesia and bismuth, or of bicarbonate of soda, directly after eating (or in some instances before), the excessive acid can be neutralized and thus the continuation of salivary digestion in the stomach be rendered possible.

In cases of hyperchlorhydria, then, whether they have progressed to the condition of acid gastric catarrh or not, your proper course will be to order as bland, non-stimulating and easily digestible a diet as possible, at the same time taking care that it is one that will fully supply the needs of nutrition. You will best accomplish this in most cases by letting milk, when it agrees in other respects, form a large part of the aliment, adding to this eggs, gluten preparations, maccaroni or spaghetti, and toast or zwieback, with also an abundance of butter or other fats, provided the intestinal digestion be not seriously impaired. The blander vegetables may also be added, especially in the form of purées, and baked or boiled and mashed white potatoes often agree fairly well when eaten slowly in the early part of a meal. String beans, spinach or squash may, in many cases, be safely allowed, but all the starchy foods need to be thoroughly well masticated and in-

salivated and taken in the earlier part of a meal before the stomach contents have become excessively acid. Idiosyncrasy (which here means usually intestinal indigestion) may compel the omission, in certain cases, of various articles which agree perfectly in others apparently similar. Cane sugar is apt to increase fermentation, but may sometimes be well borne. Fish or meat may be safely allowed at one of the three daily meals in all except the most stubborn cases, and especially for patients who are obliged to live in hotels or boarding houses. Without these foods patients so situated are often driven to desperate straits, since they can rarely obtain enough of other viands that are suited to them. Beef juice or scraped beef is much better for these patients than meat fiber, for the double reason that it digests much more rapidly and is far less irritant to the inflamed gastric glands. Hashing the meat and removing the gristly portions is also advisable. All the more acid fruits should be forbidden, though the milder ones, such as baked sweet apples, white grapes and bananas, and, exceptionally, fully ripe peaches or pears, and very sweet oranges may be allowed *sparingly*.

The best beverages for such patients are water and milk, variously combined and flavored. They may be pleasantly warm at meal-time, but never hot enough to be decidedly stimulating. There is no objection to the infusions of burnt grains known as cereal coffees. Indeed, they are nourishing and innocuous and most patients soon learn to like them almost as well as their accustomed infusions of the real stimulant beans. A large use of some non-stimulating fluid is helpful in diluting the excess of acid in these cases, both during and after meals, except when the motility of the stomach has become seriously impaired, and even when there has occurred some dilatation from pyloric spasm, a glass of plain water drunk every half hour during digestion will often do good, rather than harm, by lowering the acidity of the gastric contents to the non-irritating point. Observation in a large number of cases has led me recently to this view, which is contrary to that taught by some leading authors and formerly held by me.

Real coffee and also tea stimulate the gastric glands, and, besides, tend to increase the amount of uric acid in the system, and many (perhaps I should say most) of these patients suffer from uric acid excess. Chocolate is better, except when there is concomitant intestinal indigestion, and then it usually aggravates the latter condition. The best grades of beers and of the lighter ales sometimes agree well, when taken with or after meals, on account of their diastasic qualities, though, except in the smallest quantities, they are liable to do harm, because of the acid they contain.

The spirituous liquors, though not acid, stimulate the peptic glands in small doses, and act injuriously, when long continued in any dose, upon the liver which, in these cases, is damaged soon enough anyway by the auto-intoxication resulting especially from the intestinal complications.

The most important articles of diet contraindicated and to be forbidden

entirely are the sharper condiments, such as pepper, horse-radish, mustard, spices of all kinds, vinegar, garlic, onions, and the hot or stimulating sauces. An excessive amount of salt is also objectionable. Meat fiber, unless finely hashed, tends to over-stimulate all the more decided cases of hyperchlorhydria, and should be much restricted at least. The vegetables, like peas, beans and corn, except when prepared in purée form, contain much tough and irritating indigestible residue and do not suit such cases well. Coarse oatmeal with its sharp husks, and any of the cereals when only partly cooked, are sure to aggravate.

When one considers that in most American restaurants, hotels and boarding-houses, as well as in the majority of private households, the soups are fiery hot, the steaks and chops prepared with butter and pepper, and the coarser cereals that are almost universally furnished, rarely more than half cooked, is it any wonder that chronic acid gastritis is the most prevalent form of dyspepsia in this country, and that it is, under ordinary conditions, very difficult to cure?

Patients thus afflicted should not do more than a very moderate amount of mental work, and, though they need to be as much as possible in the open air and sunshine, should not exercise even their muscles excessively—to the point of marked fatigue. They should be very moderate in sexual indulgence and avoid entirely sexual excitement which remains ungratified. They should, above all else, have an abundance of sleep. Cold or tepid sponge baths (preferably with salt water), salt rubs, and various other tonic hydiatic procedures are helpful.

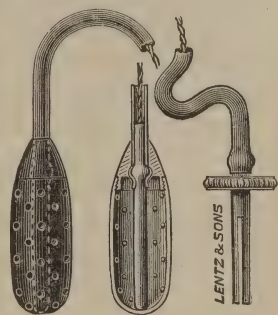
A very valuable and, in many cases, an indispensable means of combating the sthenic, as well as the asthenic or atrophic, forms of chronic gastritis is lavage. In most of the advanced cases, and in all of those with dilatation and stagnation, which often result from spasmodic contraction of the pylorus in this disease, you will need to wash out the stomach every day, or, at the very least, every two days. Dissolve two teaspoonfuls of bicarbonate of soda in each quart of warm water and have the lavage continued with this solution until the last comes away clean, without even small fragments of mucus. When the stomach is badly infected with yeast fungi, or other micro-organisms, I have found the solution of half a teaspoonful of alum, instead of soda, in the last quart of water a helpful resource.

The lavage, as a rule, should be done in the morning, at least twenty to thirty minutes, if possible, before breakfast, though there is no objection to washing out later in the day, provided a time can be found when the stomach is practically empty, so as not to involve the harmfulness of removing digested nutriment almost ready for absorption.

A practical wrinkle which I have hit upon, and found very useful, is to precede the lavage proper by having the patient drink two or three glasses

of the prepared solution (or if this has too bad a taste, of plain warm water), and then assume such different positions upon a couch or a carpeted floor as will bring the fluid into contact successively with every part of the stomach, meanwhile taking deep inspirations and forcibly contracting the abdominal muscles so as to make the contained water wash the walls of the stomach. For example, the patient should do this at first while lying on the back, then on either side, on the face, and, finally, in the knee-chest position. These movements in such positions, kept up for three to five minutes in all, will enable the stomach to be washed out afterward completely in one-third the usual time.

You need to be fully informed as to another most valuable measure, which is especially adapted to those serious cases of chronic sthenic gastritis which have resulted in, or become complicated by, dilatation of the stomach with delayed emptying of its contents and all the dismal train of troubles which follow. It is intragastric electricity—both galvanization and faradization. By means of my modification of the intragastric electrodes previously in use, an illustration of which is here shown, it is now possible for any physician to treat in this way the most delicate patients, including some of those who cannot retain in position the ordinary stomach tube long enough to admit of a complete lavage. This is owing to the fact that the cord carrying the current is very fine, perfectly insulated and covered besides by thin rubber, while at the same time the lower end is so stiffened as to facilitate its introduction. The end-piece is also so improved in form as to be easily swallowed and, what is equally important, may be withdrawn without difficulty.



To carry out this special treatment, connect one pole of a good, high-tension faradic battery (one of Kidder's latest has served me well) with a well-wetted pad, about 4x6 inches, which is to be placed over the epigastrium against the bare skin. The patient then, while sitting, drinks a full goblet of water, swallows the intragastric electrode, and lies down on the back on a comfortable couch. The other pole of the battery is now connected with the cord attached to the electrode and the current turned on gradually. No unpleasant sensation should be experienced. For the cases with a large excess of hydrochloric acid, the coil with the finest and longest wire should be used. After the patient has become accustomed to it, a current nearly as strong as can be borne is safe to be used for five minutes on alternate days. Such treatments are often rapidly effective, not only in lessening the excessive secretion, but also in curing the catarrhal process and strengthening and contracting the dilated stomach, but should not, as a rule, be persevered with for more than a month at a time without intermitting them

for a week or two. The galvanic current used in the same way with the positive pole inside is sometimes more effective in controlling gastric pain. The ordinary faradic coils, with short, coarse wires, are more stimulating and suit better in deficient secretion. When for any reason electricity cannot be applied directly to the inside of the stomach, by the method just described, something may be accomplished by external applications of the same. Despite claims to the contrary, my belief is that strong currents can be made to penetrate the abdominal walls sufficiently to enable both the muscular and glandular structures of the stomach to be affected favorably, though probably in only slight degree directly. At all events, with a large pad over the epigastric region and a small electrode moved slowly upward and downward over the spine, the nerve centers and nerves supplying the digestive organs can be influenced in a helpful way. I generally use three to ten milliamperes of galvanism in this way, with positive to the spine. With the positive pole in the form of a very small electrode, one to three milliamperes may also be passed through the pneumogastric nerves on the side of the neck (under the edge of the sterno-cleido-mastoid muscle) with good results in most of these cases. The negative pole should be over the epigastric region as before. The seances should be from five to eight minutes every other day, or even every day at first.

General massage, avoiding the abdominal region, except for the lightest surface rubbing, is an adjuvant of value, especially in the worst cases in which active exercise is not practicable.

The use of drugs in this disease requires much care and discretion. The patients are usually the better for nerve tonics, if given through any other avenue than the stomach, and will often require temporarily anti-spasmodics or even sedatives and analgesics. But alkalies must play the largest role in the medicinal treatment. Calcined magnesia has far greater acid neutralizing power than soda and most other alkaline drugs and is the preferable remedy, especially when, as usual, there is associated constipation. The dose required to neutralize the excess of acid and gradually to lessen its secretion may be anywhere from ten to thirty grains (or even more) three times a day an hour after meals. In very severe cases it is best to give a dose of the same also just before the meals, so as to prevent interference with starch digestion.

When the larger amounts of magnesia are required, and in other cases when there is no constipation, it is necessary to combine five to ten grains of bismuth with each dose. It is then, too, often advisable to replace a part of the magnesia by a portion of prepared chalk, which is also an effective alkali. The following is a good combination for such cases:

R Magnesiae ustae,	ʒi — ʒiv
Cretae preparatae,	ʒss — ʒii
Bism. subnitrat.,	ʒi — ʒii

M. et ft. Chart No. XII.

Sig.: One mixed with a wineglassful of milk or water an hour after each meal.

In particularly stubborn cases (and plenty of such will be met with), the addition to the above prescription of one to two grains of pulverized extract of belladonna will render it more effective, though in that case, as the belladonna powerfully lessens the secretion of the saliva as well as of the gastric juice, it will be well to administer with each meal a dose of some good preparation of diastase.

When the bowels are inclined to looseness, and the magnesia cannot be made to agree, the sodium bicarbonate may be used instead. But, in that event, do not make the mistake of administering it in too small doses, which would aggravate the disease. I have often seen even half teaspoonful doses of soda followed at first by an increase of the hyperchlorhydria. In the severe cases it is safest to give the remedy in teaspoonful doses three times a day, and even then it may fail. I have seen some such combination of magnesia and bismuth as that above given succeed promptly, when soda in the fullest doses had only aggravated the excessive action of the gastric glands. In the end the soda would have accomplished the desired result; but possibly not until after the urine had been kept alkaline for a week or more, and such active alkaline medication cannot be long continued without danger to nutrition. There should be a quantitative test of the stomach contents at least every week, during any such course of treatment, to ascertain the result and avoid going too far.

In cases in which the alkalies are not well borne, I have seen the following prescription occasionally succeed:

℞ Ext. belladonnae, gr. i—gr. ii
Ext. yerbae santae, fʒi

M. et. ft. mass. in pil., No. XVI. dividend.

In other stubborn cases in which alkalies do not act well, large doses of bismuth, such as are suitable for gastric ulcer, according to Fleiner's method, may often effect surprisingly good results. For example:

℞ Bismuthi subnit., ʒvi—ʒi

Ft. chart No. XII.

Sig.: One mixed with milk or water half an hour before each meal.

Possibly in the exceptional cases, in which this prescription proves so successful, there are latent ulcers which keep up the irritation of the glands.

Nitrate of silver in doses of one-eighth to one-quarter grain is sometimes a very useful remedy. It may be combined effectively as follows:

℞ Argent. nitrat., gr. ii—gr. iii
Ext. bellad., gr. i
Bism. subnit., ʒii

M. et. ft. mass. in capsulae, No. XVI. dividend.

Sig.: One after each meal.

This combination is adapted best to cases in which the bowels are too loose, or may be given additionally to correct the over-laxative effect of the treatment by magnesia.

Another useful method of treating the disease under consideration is by spraying the inside of the stomach with a 0.1 to 0.2 % solution of nitrate of silver, after first washing out the viscus.

In most cases of acid gastric catarrh, it is not so difficult to remove all symptoms, to stop virtually entirely the excessive secretion of mucus and to bring the hydrochloric acid within normal limits, as it is to maintain this improved condition. The trouble is that the patient is rapidly relieved of all that he complained of, and will rarely continue treatment till the physician finds by his tests, chemical and microscopic, that the disease has been really cured. A low-grade inflammation of the gastric mucous membrane persists, and when treatment with the careful diet and attention to hygienic requirements otherwise are abandoned, the symptoms soon return.

The only safe plan is to insist upon careful living, with some mild treatment, until the disease can be shown to be well; and, even then, to warn the patient that only by persevering with a reasonable amount of care can he continue well.

The New Illinois Medical Practice Act. The part of the new medical practice act for Illinois which has been subject to criticism (*Medicine*, July, 1899) is that section which requires examinations of all graduates in medicine excepting those from legally chartered medical colleges in Illinois in good standing. It is felt by many outside of the state that to require an examination of alumni of the University of Pennsylvania and Harvard Medical College, and at the same time to admit those from the legally chartered medical institutions of Illinois, is in effect to legislate in favor of home production. That such a rule should be based wholly upon the merits of the case cannot for a moment be denied. The committee who urged the passage of the new act were a unit in the belief that a state examination was the most important part of a medical practice act, and that it should apply to all who applied for a license. As there was opposition on the part of certain medical schools now in the state, a clause was embodied permitting the State Board to recognize diplomas of local institutions. An examination of the law shows that this clause is permissive, and not mandatory. Already the College of Physicians and Surgeons of Chicago has passed resolutions that it does not desire to have its diplomas recognized. It is expected that this action will soon be followed by similar resolutions by the majority of medical teaching institutions in Chicago. This view on the part of teaching faculties will undoubtedly lead the State Board of Health to throw out all diplomas, which they may do under the section in question, which reads: "Graduates of legally chartered medical colleges in Illinois, in good standing, as may be determined by the Board, may be granted certificates without examination."

CORRESPONDENCE.

AN IMPORTANT ANOMALY.

To the Editor of the INTERNATIONAL MEDICAL MAGAZINE:

THE St. Louis *Globe Democrat*, of July 20th, tells this story:

"A hole in his right heel enabled a negro workman in the diamond fields of South Africa to secrete and steal gems to the value of \$273,000. These he expressed in small parcels of fruits to a cousin in King William's Town, in the extreme south of Africa, from which place both recently departed for England."

This reminds me of an abnormality which I discovered in the dissecting room work at King's College, London, Eng., in 1886—one which we had never seen before, and did not ever expect to see or hear of again, but like Banquo's ghost, here it seems to be again. Dissecting down on the os calcis, we found the tendo Achillis to become somewhat more rounded or cord like than usual and terminate in a hole or pit, into the bottom of which it found firm hold. The pit resembled a navel or umbilical depression, which had a well-defined border, receding, like the corolla of the calla lily, where the tendon rounded over it. Calling the attention of the demonstrator to this peculiarity, he said he had not seen anything like it in his many dissections, and he thought it quite worthy of note. But nothing, so far as I know, ever followed this conversation. Not even to know whether or not he ever made a note of it for himself or as a matter of archival record, I certainly did not until now. Supposing the tissues superficial to this depression to have conformed to it, which in this instance was not the case, and that by help of the fasciae these were fastened to conform to it as in a dimple of the cheek or chin, we would have what the *Globe Democrat* calls a hole in the heel—a very nice pocket place or hole into which to press a diamond would have existed; forming, perhaps, another such a case as the *Globe* speaks of.

No doubt many opportunities would occur to those working at these great diamond fields of South Africa, where so much of value is done up in small packages, notwithstanding the watchfulness practiced, for any one having this malformity to walk off with a diamond in his heel; truly then, there could be "nothing more brilliant than a nigger's heel."

If he did not press the button too hard, as it were, and ring an alarm, he might get away with a number of them, even as far as London, as this man did with his accomplice. There he could shine with \$273,000 in more places and ways than one, and society would be dazzled and sociologists would be puzzled to know how these things could be. They would have a new problem in sociology to solve, without suspecting its anatomical solution. They would all have to come to the doctor to find out, and be introduced to some plain physiologic and anatomic facts. As "a pound is a pound," so facts are facts—"the worl' a roun'."

H. L. GREEN, M.D., M.R.C.S. ENG.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Quinin in Malaria. Dock (*Jour. Am. Med. Assoc.*, July 29, 1899), in a paper read before the Section on Practice of Medicine at the 50th annual meeting of the American Medical Association, recently held in Columbus, O., discusses this timely topic in a very able manner. He deprecates the exhibition of such large doses as were at one time believed to be necessary, and states that even in the tropics 30 to 45 grs. of quinin *per diem* are sufficient, while here, "in the northern half of the United States, the milder intermittents are often checked by a single dose of 5 grs., more certainly with 10. In general, however, 15 grs. may be looked on as an average dose in such cases. In the severe and more obstinate estivo-autumnal forms, 20 grs. a day may be taken as the normal dose." He believes that it is best to administer that amount at one dose, "or within a time not longer than 2 hours. As to the time at which this should be given, opinions differ. Some, following the teaching of Sydenham, and latterly of Bacelli, Plehn, Manson, etc., give the drug in the decline of the paroxysms. Others, following Golgi, prefer to antedate the paroxysm, believing that by this means the quinin will meet the parasite in its most susceptible stage, when it has just been set free." Dock believes the results to be "more certain and more satisfactory in every respect," when the quinin is given in the decline. In double or still more complex infections, it will be necessary to follow each paroxysm by the remedy. After the temperature falls, quinin is no longer necessary as a specific, but may be given for its tonic effect, say gr. 2, t.d., with or without iron. Dock further touches upon the subject of hemoglobinuria, and sums up as follows: "The question of quinin in malarial hemoglobinuria must be settled by careful clinical observation and experiment, and statements regarding it must be given credit in proportion to the accuracy with which the observations are made. In the meantime, quinin can be used cautiously, if parasites are present, giving the drug in a form

most likely to be absorbed, in doses within the limit of ordinary safety, and stopping its administration as early as the microscope shows this to be proper."

Reaction of the Blood of a Diabetic to Methylene Blue. *The Gaz. des Hop.* (June 13, 1899), quoting from an article of Williamson's (*Pharm. Central.*, 1899), says that diabetic blood will decolorize an alkaline solution of methylene blue, the latter taking on a yellowish color when heated. The solution will not be changed if the blood from a person with any other malady be added to it. Preparation of the solution:

Blood,	1
Water,	2
Methylene blue (1:6,000),	50

To this one add

Caustic potash (6% Sol.),	2
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Boil 3 or 4 minutes on a sand bath. The solution is then ready for the test designated.

The Origin of Venous Congestion in Cases of Complete Compensation of Aortic Insufficiency. E. Grawitz (*Deutsch. Med. Woch.*, No. 20, 1899) contributes an interesting article under the above caption. As he points out, we have hitherto regarded venous congestion, during the course of aortic insufficiency, as an evidence of failing left ventricle. In Grawitz's case, although compensation was perfect, marked congestion of spleen and liver occurred, without palpable evidence, however, of pulmonary congestion or pulsation of veins of head, neck or extremities. Arterial hyperemia could be excluded, since there was no pulsation, and from the high degree and firm consistence of the swelling. Such a case, coming to autopsy, revealed venous congestion of liver, spleen and kidneys, with great hypertrophy of the left ventricle, this latter bringing about such an increase in the size of the organ as to cause it to press upon the inferior cava, and in this manner resulted the condition described. That the veins of the lower extremities were not involved, is explained by the collateral circulation which took place between the vena azygos and the lower end of the vena cava. In any case of hepatic enlargement, unless its cause is perfectly clear, the transverse diameter of the heart should be determined by percussion, if necessary, by the Röntgen rays.

The Excretion of Sugar after the Ingestion of Copaiba. Battenam (*Berlin. klin. Woch.*, No. 22, 1899,) recounts the history of a young man who took on his own responsibility 16 gms. of copaiba *per diem*, believing it would cure an attack of gonorrhea from which he was suffering. His urine contained sugar. The author found an increase of sugar in the urine of diabetics after the administration of copaiba, and further, he was able to induce glycosuria in individuals to whom he gave simultaneously balsam copaiba and 100 gms. of grape sugar, though the latter alone was unable to induce glycosuria. He therefore urges great care in the use of this drug in those predisposed to diabetes.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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Contribution to the Clinical Study of Endocarditis Ulcensa Maligna. Ebstein, in a complete and interesting article (*Deutsch. Archiv. für klin. Med.*, Band 63, July 7, 1899) draws the following conclusions: The disease may be said to have an acute, subacute, and chronic course. A settled and constant symptomatology cannot be given for the affection. Other things being equal, the earlier severe brain symptoms are manifest the worse is the diagnosis. The indication of the malignancy of the condition is not so much the local heart signs as the general symptoms. The fever is usually wholly atypical, often with the so-called inversed curve, and is characteristic, not so much in its height as in its great changes. The condition may be easily confused with a cryptogenic septico-pyemia and the differential diagnosis may be impossible. Erratic and atypical fever, with daily chills, cannot, of course, with certainty be taken as a diagnostic sign of metastatic abscesses in malignant endocarditis as they would occur in any pyemic infection. The diagnosis of the typhoid form of the disease can only be reached by exclusion. It is doubtful whether the typhoid state is a result of a general blood poisoning upon the nervous system, or whether it is due, as in a reported case, to abscess formation in the brain. Bacteriologic examination of the blood and lumbar puncture might settle this point.

The Present Aspect of Some Vexed Questions Relating to Tuberculosis, with Suggestions for Future Research Work. Trudeau (*Bull. Johns Hopkins Hosp.*, July, 1899) refers to much of extreme interest that does not, unfortunately, lend itself to condensation. Some of his statements as to the present aspects of the question in dispute are as follows: The border line between racial susceptibility and immunity is very indistinct, and some slight, artificially produced variations are sufficient to render an immune animal susceptible to the tubercle bacillus in its different forms. He refers to the investigations of Flügge, that show that the act of coughing in a phthisical individual disseminates bacilli. Baldwin has shown that the hands of individuals carrying handkerchiefs may be a source of infection. Trudeau advocates the establishment of large sanatoria outside the large cities for the treatment of hopeless cases, and institutions managed by the State for the cure of incipient

cases. Much is to be learned about the variations in strength of tuberculosis. Trudeau believes that he can obtain as efficient toxin from somewhat attenuated cultures, though not as concentrated, as from the more virulent ones. Lovene and Baldwin, in the Saranac Laboratory, have isolated 3 distinct proteid bodies from the tubercle bacillus, each differing in its chemical characteristics. In diagnosis, Trudeau lays especial stress upon the use of tuberculin and the X-Rays. The first he believes is harmless. He accepts the theory that the reaction is brought about by the release of stored-up toxic substances in the bodies of the bacilli by the hyperemia caused by the tuberculin. He employs the X-Rays to determine the excursion of the diaphragm and the presence of slight shadows suggesting consolidation. He refers to his experiments in attempting to produce immunity by inoculation of attenuated cultures. He was, apparently, successful in producing complete immunity in rabbits by inoculation into the anterior chamber of the eye. He states a still more interesting fact, that he can produce a lessened susceptibility to tuberculosis in guinea pigs by the injection of a culture that has been growing on different media for 6 years—most of the time on glycerin-pepton bouillon, either neutral or slightly acid. He does not know whether the presence of acid destroys the virulence or not, but inclines to the idea that mere saprophytic existence of a pathogenic micro-organism causes it to lose its virulence, perhaps, from the long period in which the bacteria have not had to cope with the resistance of living tissues. In 36 control animals, the average life was 57.2 days and in 66 animals vaccinated with this attenuated virus the average life was 154.3 days after virulent inoculations. In the end, the vaccinated animals died of chemic tuberculosis. This may show merely that the disease is not auto-inoculable, as is the case with syphilis.

DISEASES OF THE DIGESTIVE SYSTEM.

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Does Bile Possess Antiputrefactive and Antibacterial Properties? Mosse (*Zeitschr. f. klin. Med.*, Vol. XXXVI., No. 6; *Bolnitsh. Gaz. Botk.*, Vol. X., No. 13) endeavored to solve the following problems in relation to this very important subject: (1) Does bile exert any influence on the putrefaction of albumin in the living body? (2) Does it possess similar properties outside of the organism, in the test tube? (3) What influence does it have on the fermentation of grape sugar? (4) Does it

possess any antibacterial properties? To answer these questions, the author performed the following experiments: (1) A dog received with a mixed diet 5 gms. of dried ox gall for a few days, alternating with a similar period when no bile was administered. The ethereal sulphates in the urine were determined each time, and it was found that bile exerts no influence on the putrefaction of albumin in the intestine. (2) Two tubes were filled with an equal amount of water, peptone and 10% solution of soda, to one some ox-gall being added. The tubes were inoculated with feces or *bact. coli* commun., and placed in the incubator for 24 to 48 hours. The contents were then distilled off and the distillate tested for phenol and indol, with the result that the presence of bile seemed to have increased the putrefaction of albumin caused by the bacteria. (3) The fermentation of carbohydrates was also shown to be greater in the presence of bile. (4) The antibacterial properties of bile were determined by adding various quantities of bile to an agar culture of feces, *bact. coli* commun. or diphtheria bacilli in either alkali or acid medium. It was found that bile does exert a retarding influence on the growth of bacteria, but only when it is sufficiently concentrated, and then the action only lasts for a short time (24 hours). The conclusions arrived at by the author are, that bile does not decrease putrefaction, but, on the contrary, increases it, and that its retardation of bacterial growth is only temporary. Its administration would, therefore, be, *a priori*, contraindicated in auto-intoxication resulting from intestinal putrefaction.

On the Influence of Medication on Gastric Secretion. Riegel (*Allg. Wien. Med. Zeit.*, June 13, 1899) read a very interesting paper before the Congress of Internal Medicine in Karlsbad, bringing forward experiments performed by him on man and animals which establish the fact that atropin given internally inhibits, while pilocarpin increases the secretion of gastric juice. When animals operated on according to the method of Paralow were fed on 1 liter of milk, 2 hours after the meal, 16 c.c. of pure gastric juice were obtained from the secondary stomach; but when atropin was administered, the amount of gastric juice diminished to $\frac{1}{8}$ or $\frac{1}{16}$. The acidity was also diminished from $\frac{1}{2}$ to $\frac{1}{3}$. On the other hand, after the administration of pilocarpin, the amount of gastric juice was doubled or quadrupled. The same phenomena were observed in 80 experiments performed on man.

A Unique Case of Spontaneous Gastro-entero-anastomosis. Dr. Snévé (*St. Paul Med. Jour.*, No. 5, 1899) presented before the Ramsey County Medical Society a *post-mortem* specimen of spontaneous gastro-entero-anastomosis, following a perforating gastric ulcer. This remarkable specimen was from a patient with the following history: "A white male, *aet* 70, of Scotch extraction, was seized with a profuse hemorrhage from the stomach 10 years ago, which nearly cost the patient his life and kept him confined to his room and bed nearly a whole year. After this attack, the patient suffered frequently with intense pains in the epigastrium, which were only relieved by vomiting, or by having the stomach washed out

thoroughly. These colicky pains were never wholly absent except when the stomach was entirely empty or when there had been free evacuations from the bowels. Many physicians were consulted, but no permanent relief obtained. The appetite was always good and the bowels responded well to pulv. glyzyrrh. com. His heart grew weaker and weaker, until he died of inanition." This stomach is an illustration of a gastro-entero-anastomosis which has not been achieved by means of suture, bone plate or a button, but was attained through the agency of benevolent nature. The usual result of a perforation from a gastric ulcer is a localized peritonitis with formation of a mass of scar tissue and frequently adhesion to other organs, but a perforation into the hollow viscera, and formation of a permanent anastomosis, as in this case, is unique. This condition must have existed about 10 years in the patient. A loop of the jejunum was caught up near the pylorus, and adhesions formed to the postero-superior and antero-inferior surfaces of the stomach; perforations, exudations and a permanent anastomosis followed. The duodenum was surrounded posteriorly by this localized exudative peritonitis, and the opening of the ductus communis choledochus was only an inch from the pylorus.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Chronic Malarial Nephritis, with Report of a Case. Larned, (*Johns Hopkins Hosp. Bull.*, July, 1899) states that there were two points of great interest in the above case: (1) The fact that the infection was of a quartin type, the rarest of the 3 recognized forms of malarial fever; (2) the associated nephritis, which was almost certainly dependent upon this, or a previous malarial infection. It is well known that malarial fever is an important factor in the production of nephritis, and out of 758 cases treated at the Johns Hopkins Hospital 21 instances of acute nephritis were found. The case, a child, was admitted to the hospital, and on examination was found to have marked edema of the face, genitalia and ankles, abdomen was distended and exhibited the usual signs of ascites, teeth irregular and notched, but no pegging; tibiae rickety; heart action rapid—128 per minute; apex not displaced, no murmur, slight accentuation of aortic and pulmonic sound. Rales over both bases of lungs with marked puerile breathing everywhere, respiration 46 per minute, thoracic in character, temperature 99°F. Paracentesis abdominis was done and 3 quarts of turbid fluid was removed and on abdominal palpation the spleen was found 5 cm. below the costal margin. On examination of the blood, the diagnosis

of malaria was made, and quinin given. Urine was slightly cloudy, acid, sp. gr. 1.010, on boiling almost a solid precipitate was thrown down. Microscopically there was hyalin, fine and coarsely granular, also epithelial casts, a great deal of detritus, no red cells, a few leucocytes and epithelial cells. The child gradually improved, although the amount of albumin was always high. Six months afterward the author was called to see the child, and found her profoundly comatosed; pulse 160. She had had several convulsions during the previous 5 hours and died in one. The conclusions to be drawn from this case and others already reported are: (1) Certainly in some localities malarial fever should be given a prominent position in the etiology of chronic as well as of acute nephritis. (2) In all cases of malarial fever the urine should be closely watched. (3) A blood examination should be made in all cases of nephritis occurring in those who have visited or lived in a malarial district, as it often happens that the severe grade of nephritis resulting may mask entirely the clinical picture of malarial fever.

Sarcoma of Kidney. Baldwin (*Cleveland Med. Gaz.*, Aug., 1899) reports 3 cases of sarcoma of the testicle and 1 case of sarcoma of the ovary, developing either previously to, or simultaneously with, sarcoma of the kidney. He believes that the renal growths were not the result of metastasis, and suggests that the association is but the expression of a disease independently attacking different tissues that have a common embryonic parentage. As growths of the left kidney and splenic enlargement are frequently confounded, the author describes a useful means of differential diagnosis. The enlarging kidney tends to separate the folds of the descending mesocolon, so that the colonic tympany is in front of or to the outer side of the renal enlargement, while the enlarging spleen must, from anatomic reasons, lie to the outer side of the colon. Inflation of the colon may aid this practical point in the differential diagnosis.—W. B.

DERMATOLOGY.

UNDER THE CHARGE OF

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Syphilitic Reinfection (in a Physician). Oustinoff (*Annal. de Dermatol. et de Syphilolog.*, Feb. 1, 1899) reported before the Syphilographic and Venereologic Society of Moscow the observation of a case of reinfection in a confrère. The first time, in 1890, there appeared an indurated chancre, which was followed by syphilides, the diagnosis being confirmed by Prof. Pospeloff. In 1891, an ulcerated gumma of one tonsil made its appearance, and this was the last manifestation. In January, 1898, there developed,

after a suspicious coitus, a new syphilitic chancre, which was soon followed by a characteristic roseola and a plantar papular syphiloderm.

Black Tongue. Vollmer (*Annal. de Dermatol. et de Syphilog.*, Feb., 1899) exhibited before the Berliner Dermatologische Gesellschaft, microscopic preparations of a case of black tongue from a patient who had syphilis the preceding year. The entire surface of the tongue has a black tint. Under the microscope were found white blood corpuscles, typical salivary corpuscles and special corneous productions. The affection consists of a hypertrophy of the lingual mucous membrane with developments of the epithelial layer of each papilla. The patient declares that his tongue was black before the syphilitic infection. Nevertheless, in more than one-half of these cases, there is an antecedent history of syphilis.

Tinea Tonsurans of the Scalp in an Adult Man. Abraham (*Brit. Jour. Dermatol.*, Apr., 1899) exhibited to the Dermatological Society of Great Britain and Ireland a man with ringworm of the scalp. He remarked that "certain authorities, especially abroad, had stated that tinea of the scalp never occurred in adults; but that was not the experience of dermatologists in this country; for, although the condition is extremely rare, some of us had occasionally encountered such cases." The present case was the fourth that the author had seen within the past 14 years. The first was in a woman, aged 30, both of whose children he was at the same time treating for the disease. The case proved a most difficult one to cure. Another case occurred in a medical student, 21 or 22 years of age, in whom the scalp lesion was well marked. This patient was soon cured. The third was in a woman, who had a tinea circinata at the nape of the neck which spread upward to the scalp. The present patient had just recovered from an amputation of the arm at the shoulder joint for tuberculosis. He left the hospital in December, and a week or two afterward he observed a rough patch with loss of hair on the back of his head. A week later the daughter of the patient developed a similar patch. Hairs from the man's patch exhibited an abundance of trichophyton megalosporon endothrix. The large spore was also present in the medical student, and probably in the others.

Diseases Affecting the Nails. Jonathan Hutchinson (*Med. Press and Circ.*, July 26, 1899), in a clinical lecture delivered at the London Hospital, discussed some of the important diseases affecting the nails. He states as a general rule that the character of nail lesions depends not only upon the original disease of which they are an extension, but also upon the thickness and strength of the nail itself. The thicker the nail, the more distinct usually are the lesions. Certain marks and grooves upon nails mark the date of some severe attack of illness. These vary from transverse white lines, curving across the substance of the nail, to deep grooves, and even hemorrhagic stripes. The author exhibited a water-color drawing of the hand of a young man who had had a number of "bilious" attacks, characterized by headache, anorexia, coated tongue, etc., each followed by the appearance of broad transverse grooves across all of the nails. Such grooves are by no

means uncommon, especially after febrile and gouty attacks. In most cases it is only upon thick, strong nails that this phenomenon occurs; thin, brittle nails being largely exempt. The grooves grow out and toward the free edge of the nail, and are then shed. Psoriasis and eczema have each their characteristic mode of affecting the nails. These may be roughly distinguished by saying that psoriasis usually attacks the free border, nail bed and under surface of the nail, and spares the upper surface; whereas eczema generally attacks the root and folds of the nail, and roughens and pits the upper surface. An inflammation of the nail bed extending under from the free or distal margin, loosening the nail at its tip and often accompanied by an accumulation of epidermal scales beneath the nail, is not an uncommon symptom in the course of a general psoriasis. This form of nail disturbance may, however, be the only symptom of the disease, and its nature then is proven by its yielding promptly to arsenic. In eczema, the disease begins at the root or folds of the nail, and affects its substance and surface much more severely. Longitudinal thickenings and furrows are often produced, the nail is opaque and dirty looking, and its surface rough, often stippled all over, as with a series of shallow pin pricks. It is a much more serious and disfiguring disease than psoriasis of the nails. There is a form of senile psoriasis of the nails—fortunately quite rare—which is extremely severe. Spreading from the nail bed, it causes ulceration of the finger tips, and even leads to gangrene. It also affects the toes, and may cause so much pain as to render walking impossible. In clubbed fingers the nails are greatly enlarged, both in length and breadth, while in acromegaly the fingers are enlarged, but the nails are unaffected. This may be used as a diagnostic point in discriminating between the two conditions. There is a pustular disease of unknown origin which attacks the nails of children. Red spots appear in the nail substance, form minute abscesses, and break through the surface of the nail. These pustules appear in crops and are quite likely to recur. Ringworm affects the nails at times in a very similar manner, painful spots appear in the nails, and then pustules form, which break through the surface. As a rule only one nail is affected at a time, and the disease spreads slowly and obstinately from one to another. The condition is apt to be associated with ringworm of the body or scalp.

Syphilis in Russia. Dr. Livshitz, who was sent by the Society for Preventing Infectious Diseases to investigate the spread of syphilis in the district of Minsk, examined 23,137 persons—6,493 men, 8,139 women and 8,505 children. Of these 1,244, or 5.02 %, were found syphilitic. Of the forms of syphilis, a hard chancre was found in 4; 323 with secondary, and 917 with tertiary lesions. Of 40,207 peasants examined, 1,694 were syphilitic, 5 suffering from an initial lesion, 468 secondary and 1,221 tertiary. In the city of Minsk 4,931 persons were examined, 96 having been found syphilitic. Of the entire number of syphilitics, 1,790, 831 were men, 778 women and 181 children.—*Vratch*.

PEDIATRICS.

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The Etiology of Scarlatina. W. J. Class (*Medicine*, June, 1899) briefly rehearses some of the attempts that have been made to isolate the specific germ of this important disease. He lays stress upon the observation of Behla, viz., that several pigs exhibited a scarlet rash followed by desquamation; and this at a time when scarlet fever existed in the family of their owner. During the winter of 1897-98, the writer examined some 700 or 800 cultures, taken from the throats of as many sufferers with angina. He occasionally found large diplococci; and later he observed that these organisms developed most frequently in cultures from scarlet fever patients. From the results of his subsequent experiments, he has been led to believe that the germ noticed is probably the specific causative factor of scarlet fever. *Morphology.*—The organism is a diplococcus, polymorphous in character, but resembling under standard conditions “a very large gonococcus.” Tetrads are occasionally seen. Multiplication occurs by subdivision. Streptococcus forms are occasionally met with, and perforce of the large amount of gelatinous intercellular material, these cocci may be congregated in bunches of from 10 to 50. The organism has no capsule, though it appears to have at one stage of its growth. *Staining.*—The writer has stained with a watery solution of methylene blue, with carbol-fuchsin, Bismarck brown and Pitfield’s flagella stain. It is decolorized by Gram’s method, but not to the same extent as the gonococcus. *Biologic characters.*—The best culture medium in Class’s experience is a glycerin agar solution, containing 5% of sterile black garden earth. The preparation of this medium is carefully described. He cultivated this germ from the scales of 74 cases of scarlet fever, from the throats of about 50 patients and from the blood of 16 persons, all suffering from scarlet fever. Cultures grown from blood taken on the first day usually grew quite readily. Later in the disease the growth becomes meager. The author then performed careful control experiments, taking cultures from the skin, throat and blood of supposedly healthy individuals. The blood tests were always negative. *Pathogenesis.*—Normal rabbits and guinea pigs were not affected by inoculation of pure cultures of this diplococcus. Two guinea pigs in a depressed state of vitality became sick and died, however. The autopsies upon these latter revealed acute nephritis, and pure cultures of the organism under discussion were obtained from the diseased organs. Class injected 5 pigs, 4 through a vein in the ear, and 1 in the abdomen; 4 animals exhibited fever, an eruption and subsequent desquamation. The first one was

killed, and revealed practically the kidney changes observed in the guinea pigs. The last pig showed nothing but a slight rise in temperature. The author then differentiates between his germ and various structurally allied organisms found in the skin, throat and naso-pharynx.

Why the Child Strains at Stool, and the Way to Its Relief. P. C. Martin (*Columbus Med. Jour.*, June 13, 1899) advances the following anatomic reasons in explanation of difficult defecation of infants and young children: (1) The infant gut is very deficient in muscular fibers, and hence lacks the degree of peristaltic power possessed by the adult intestine. (2) The mesentery of the sigmoid flexure and part of the rectum is relatively much longer than that of the adult, the sigmoid mesentery often being longer than the distance from the promontory of the sacrum to the end of the coccyx. This fact, coupled with the disproportionately great length of the descending colon and sigmoid, increases the possibility of angulation of the gut. (3) The rectal valve or valves may offer resistance to the passage of feces. (The author believes firmly in the existence of these valves, having observed them in more than 300 cases.) (4) The outlet of the infant's bony pelvis is so contracted that anal expansion is exceedingly limited. The writer then deals with the accidents of inguinal hernia and anal prolapse, showing that they are largely dependent upon the same immature conditions of the infantile alimentary tract. Treatment: Diet, hygroscopic suppositories, fluid enemata and massage are the measures which should be directed against constipation in infancy. Dilatation of the contracted pelvic orifice may be accomplished by introducing the "trained finger" into the rectum. Martin also deals with the treatment of hernia and infantile prolapse.

The Question of Gruels in the Feeding of Infants. Chapin (*Med. Rec.*, Aug. 5, 1899) treats this question in a convincing article. He made careful test-tube tests, and careful experiments upon dogs with gastric fistulae, all of his experiments showing conclusively that a finer curd and more perfect digestion of casein obtained when decoctions of gruels were given with milk. Clinical evidence has amply confirmed these experimental results, and Heubner, with his enormous experience, has come to the same conclusions. The author believes that infants can digest a small amount of starch. Later analyses of cereals, however, show that they contain less carbohydrate than was formerly supposed, and the starch in these grains may be dextrinized by the use of a diastatic decoction, such as Chapin describes.

Absorbing Capacity of Children. W. Jakubowitsch (*Med. Obos.*) states that absorption by the gastric mucosa is much diminished immediately after lavage of the stomach. Elevated temperatures reduce the absorbing capacity of the stomach and rectum. Absorption by rectum is slowest in the infant and most rapid between two and four years of age. Aqueous solutions of potassium iodid are not absorbed by the normal skin.—*Journal of the Association.*

THERAPEUTICS.

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Toxicity of Strychnin. Todd (*Phila. Med. Jour.*, May 20, 1899) mentions a case of a child, 20 months old, accidentally swallowing a tablet containing a $\frac{1}{20}$ gr. strychnin sulphate; child died within an hour in convulsions; *post-mortem* showed no gross pathological change, except some congestion of the pia.

Sulphuretted Hydrogen as a Germicide. Noskowski (*Le Progrès Med.*, May 27, 1899) used this gas in a number of different diseases, and believes it to retard germ growth in the body, thereby lessening the amount of toxin formation, and in this way alleviating or curing the case. In reporting his cases he has tabulated them and separated them into classes, viz.: (1) Infections of intestinal tract—such as typhoid fever (18 cases, all cured), cholera (17 cases), diarrheas, dysenteries, etc.; (2) general infections—measles, malaria (4 cases—3 cured, 1 died), influenza, erysipelas (7 cases—7 cured); (3) infections of the respiratory tract—coryza, bronchitis, pneumonia, phthisis, etc.; and under (4) another class—croup (13 cases—8 cured, 5 died) and diphtheria (48 cases—39 cured, 9 died). Even in phthisis the cases were benefited to a great extent, and some cured. The method of administration was as follows: Where given by the mouth, a capsule containing sulphuret of soda, followed by a solution of tartaric acid (the acid thus liberates the H_2S in the stomach and intestines and does away with the disagreeable odor during administration). When given by the bowel, the same method was employed, except that a larger quantity of water was added. In diseases of the chest an apparatus was used so that the patient could breathe this gas and receive only a small supply—too much causing suffocation.

A Severe Case of Puerperal Sepsis Treated by Antistreptococcus Serum and Unguentum Crede. Voorhees (*N. Y. Med Jour.*, June 17, 1899). The case was a very severe one of sepsis, following labor, adherent placenta, with chancroidal ulceration of the vulva. After delivery, the patient's condition was poor, and 4 days later she developed an abscess in the left vulvo-vaginal gland; the uterine discharges were very foul, several smaller abscesses developed later and also phlebitis (left leg). Cultures did not show streptococci, but a short bacillus, which seemed to be the colon bacillus. Nine injections of 10 c.c. of serum, 2 a day, were given, but no result was noted. She was then put upon inunctions of

unguentum crede, which was continued 2 weeks, with some improvement; finally, she developed an intermittent pyuria and a general arthritis. This, however, subsided, and the case was discharged 80 days after labor.

On the Use of the Valerianates of Creasot and Guaiacol in the Treatment of Pulmonary Tuberculosis. Briggs (*N. Y. Med. Jour.*, May 20, 1899) has used these drugs in phthisis, and reports 4 cases in which marked improvement was noted. His conclusions are: That they are more beneficial than creasot, and can be given in smaller doses; the appetite improves, showing less impairment of digestion; the sedative action of the valerianates controls the nervous symptoms to a great extent. Hemoptysis and tuberculous enteritis are, generally, prevented. The dose is from 10 to 30 drops.

The Treatment of Typhoid Fever with Chloral. Dumont (*Jour. de Med. interne*, Apr. 15, 1899) believes it to be very useful in relieving the restlessness that accompanies high fevers; and that, when thus quieted, the patient's strength is saved. The dose given was about 15 to 30 grs.

Cretinism and its Treatment. Pillsbury (*Annals of Gynecol. and Pediat.*, Vol. XII., No. 8) reports a case which had been upon different forms of extracts of thyroid glands (glyceroles, powders and tablets) for a number of years, with little or no improvement. He, therefore, decided to put the case upon the gland itself, taken from the sheep, immediately after killing, under strict aseptic conditions. He started with $\frac{1}{4}$ of a lobe, which is equal to a $\frac{1}{2}$ gr. thyroid principle, and gradually increased, until the child could take a $\frac{1}{2}$ lobe (8 gr. p.) 5 days a week; this rise in dosage had to be brought about carefully, as the child often showed manifestations of overdose (rheumatic pains, hysteria, spasms and sleeplessness), which were allayed by such drugs as bismuth, salol, soda bicarb. and hypnotics. Knowing that one of the thyroid principles contained iodine, and thinking that stimulating the gums might cause a more rapid growth of teeth, the tincture of iodine was used, but this caused too much gastrointestinal disturbance and had to be stopped; the Syr. of Hydro-iodic acid was substituted, with good results. The author believes that when the gland cannot be obtained the extracts should be used. The above failure was not so much due to the preparations employed, as to the parents' fear of giving an overdose. At the age of 8 the child was, in all appearance, an infant, while, under 18 months of treatment, the child could stand alone, take notice, laugh and show temper. The reason sheep were selected was that their glands resemble more the structure of human thyroid. Although the diagnosis of cretinism was easy, this case was overlooked for 5 years. In dealing with the cause, the author refers to the different theories—heredity, consanguinity, dipsomania, syphilis, drinking water, etc. The experimental history of cases where thyroid glands have been implanted in animals suffering from artificial cretinism show that where the gland does not undergo necrosis, or become encapsulated, it usually takes on its proper function; but so far it is not justifiable to suggest transplantation as a remedy.

Holocaine as a Local Anesthetic in Eye, Ear, Nose and Throat Operations.

Guttman (*N. Y. Med. Jour.*, June 17, 1899) in a series of cases used 2 drops of a 4% solution of cocain in one eye, and 2 drops of a 1% solution of holocaine in the other; he did not find any difference in the time required to anesthetize, as asserted by Scherer to be much earlier in holocaine, and in the majority of cases the anesthesia lasted longer in the cocainized eye. The eye in which cocain was used was pale and anemic, the bulbus appeared protuberant, pupil dilated, aperture of the lids considerably enlarged; while under holocaine the eye was red and inflamed, the other symptoms above noted were not observed and accommodation was retained better. Applying it to the throat the objectionable bitter taste, as well as the burning, was not noticed under holocaine; and when used for a case of phthisis laryngitis the patient expressed more satisfaction. The same result was noticed when the one drug was applied to one side of the nose, and the other one to the opposite side. In cases where the surface is vascular, or in operations on the eyes of old people, cocain, on account of its being a vaso-constrictor, no doubt is more useful. The physiology of the drug he has taken from Heintz (*Klin. Monatsbl. f. Augent.*, 1897).

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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On the Agglutination of Red Blood Corpuscles and Its Causes.

Tshistovitch (*Boln. Gaz. Bot.*, Vol. X., No. 19) calls attention to the fact that the blood of one species of animals is not only poisonous, when injected, to animals of another species, but that the serum of the injected animal will agglutinate the red blood corpuscles of the blood of the animal which furnished it. Moreover, an animal which is ordinarily killed by the blood of another may be immunized to it by repeated injections. Thus, for instance, the blood of the common eel is so poisonous to rabbits that 0.1 c.c. injected into the latter will cause death in 3 to 5 minutes, but by repeated injection, gradually increased, the animal will become immunized. When the serum of the blood of the immunized animal is mixed with the defibrinated blood of the eel, the red blood corpuscles become agglutinated, forming islands with clear intermediary spaces, and finally the hemoglobin is entirely dissolved out. This phenomenon is identical with the one observed in the agglutination of specific micro-organisms. It is therefore reasonable to suppose that the agglutination of red blood corpuscles, like that of bacteria, is a biologic factor determined by the antitoxins which are produced in the blood. These antitoxins are usually divided into three classes: To the first belong the antitoxic substances which neutralize poisons; the second embraces (1) substances contained in prophylactic serums and which are of

the nature of stimulants; and (2) agglutinating substances nearly related to, but not always accompanying the former. Finally, the third class comprises the bactericidal substances, or similarly those which destroy the red blood corpuscles. These latter are the least stable. What causes the agglutination of the red blood corpuscles? The author found that when the blood of the eel is mixed with the serum of an animal rendered immune to the former, there is soon formed a cloudiness, followed by the formation of a copious sediment. This sediment, under the microscope, looks like agglutinated bacteria, but in reality it consists of an albuminous body readily soluble in dilute acids or alkalis, insoluble in water. This phenomenon is absent when the toxins are mixed with normal serum. Similar facts observed in connection with the agglutination of micro-organisms led Nicolle to the conclusion that the agglutination is brought about by the bacteria becoming enveloped in this albuminous substance, which causes them to adhere to each other. This theory, however, meets a strong opposition in the fact that the author succeeded by prolonging the immunization in producing an antitoxic serum which, while possessing agglutinating properties, did not produce any sediment when mixed with the toxin. Moreover, in the case of bacteria, the view of Nicolle meets with another objection in the fact that the bacilli of tetanus is subjected to agglutination by the antitoxin, while when the bacilli are filtered out and the filtrate mixed with the antitoxin, no sediment is observed; and even in the case of bact. coli, typhi, pestis, spirillum cholerae, b. pyocyaneus, etc., where sedimentation does occur, the latter takes place long after the agglutination, and the two phenomena, therefore, bear no causative relation to each other. The view of Gruber, who supposes that agglutination is due to certain changes taking place in the membranes enveloping the bacteria, is also untenable, since, in the case of the red blood corpuscles, which do not possess any cell wall, the agglutination could not be thus explained. The author, therefore, comes to the conclusion that the cause of agglutination is resident in the bodies themselves and not in the surrounding medium.

A. R.

Demonstration of the Fungus of Actinomycosis in Dry Pus. Lemi re (*Jour. Des Sci. Med. De Lille*, July 15, 1899) calls attention to the possible demonstration of the ray fungus in pus which has been dried. B cuc e believed that under ordinary conditions the fungus underwent rapid alterations after removal from the living body, and that after 24 hours it became difficult, if not impossible, to demonstrate the presence of typic ray fungi. Lemi re has succeeded in demonstrating the presence of the fungus in dessicated pus, kept in the laboratory for 7 years without any special precautions. While the parasite ordinarily is not abundant in the discharge from actinomycotic lesions, it is to be remembered that, while it may not pullulate outside the body, the possibility of its retaining viability renders the likelihood of infection great over a long period of time. In many of the stock-raising sections of this country the increasing prevalence of "lumpy jaw" has been remarked. The fact that man is susceptible to the disease, and that actinomycosis is manifestly becoming more frequent in

man, should lead to greater precautions in order to limit its possible dissemination. Legislation looking toward the suppression of actinomycosis has been too long delayed. The establishment of such a long period of viability should arouse interest and lead to active preventive measures. Prior to the disintegration and external opening of the actinomycotic lesion, it is not believed that the animal will communicate the disease. After this time, however, the danger becomes great. It is therefore apparent that the animal should be killed before external ulceration ensues. The best laws on the subject prohibit the use of the meat of such animals, even when there is no evidence of systemic infection. It is barely possible that such a precaution is unnecessary, and that where the lesion is strictly local it may be safe to consume the meat. Upon this sanitarians are not agreed.

The Vegetable Parasite in Cancerous Affections. Chevalier (*Gaz. des Hop.*, May 30, 1899) reports the successful cultivation of the cancer parasite. Germs were obtained (1) from fresh specimens removed during life, (2) from the lymphatic glands removed at autopsies, (3) from the blood in advanced cases, (4) from the air of the rooms occupied by cancerous patients. The author does not state definitely that the organism fails to grow upon ordinary culture media at first, but secures his initial cultures in bouillon made from the mamma of the cow. The medium should be as nearly neutral as possible and should have added to it 2 parts of sodium chlorid to the 1,000. Such bouillon, inoculated with cancer tissue (in which secondary infection is not present), is incubated at 32°C. After some days there forms a thin, whitish pellicle with clouding of the medium. Later a precipitate forms which assumes a reddish color. After acclimatization in the mammary bouillon the organism may be transplanted to the following media: (a) In bouillon made from the mammary gland and containing glucose not exceeding 10 parts per 1,000. (b) Agar. On the third day there form small, greyish, slowly-growing colonies, which eventually thicken and assume a rose color. (c) Serum. Growth like agar. (d) Gelatin. Greyish pellicle without liquefaction; optimum temperature is between 38° and 35° C. The author believes that the rose color is associated with the formation of spores, as after this time the organism is resistant to boiling for 10 minutes. Cultures show a remarkable polymorphism. Unicellular spherules, which may attain a diameter of 12 to 15 μ . Within these spherules the endogenous spores appear, and eventually escape. The sporules resemble small corpuscles 1 μ or less in diameter, sometimes presenting a bacillary form. Irregularly septate mycelia are developed. The organism stains by *bleu de Kuhne*, gentian violet, safranin, picric carmin and by the method of Gram. Subcutaneous inoculations on guinea pigs, rabbits and dogs produce tumors at the points of injection, followed by cachexia, and at autopsy in some of the cases there is lymphatic generalization and secondary nodules in the viscera. Histologically such tumors sometimes resemble sarcoma and sometimes carcinoma. The author regards the organism as identical with the organism described by Bra in the *Presse Médicale*.

CLIMATOLOGY AND HYGIENE.

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Mosquitoes Considered as Transmitters of Yellow Fever and Malaria. Finlay (*Med. Rec.*, May 27, 1899) finds additional weight added to the theory of the transmission of yellow fever by mosquitoes, by the recent researches of Koch with reference to malaria, and those of T. Smith on the transmission of Texas fever by the tick. The author asserts that not only malaria but yellow fever can be, and is, propagated by the sting of those insects which carry the infection from one patient to another, or from the infected discharges into the food. "The faculty of transmitting the yellow-fever germ," says he, "need not be limited to the parent insect, directly contaminated by stinging a yellow-fever patient, but may be likewise inherited by the next generation of mosquitoes from the contaminated parent." He thus explains many cases of infection on board of ships or places where the disease is not raging. In view of this role played by the mosquito in the propagation of disease, the author suggests that houses be provided with mosquito blinds. The larvae in swamps, pools, privies, sinks, street sewers, and other stagnant waters might be destroyed by a methodical use of permanganate of potash. The patients suffering from yellow-fever should be confined in well-ventilated hospitals with efficient drainage, and protected from mosquitoes. By these and similar means, the author believes, yellow fever may be stamped out of Cuba and Porto Rico, and malaria reduced to a minimum. [With regard to the author's theory, it may well be questioned whether the transmission of any infectious disease from the insects to their larvae has ever been satisfactorily demonstrated.—A. R.]

The Origin and Spread of Diphtheria, and the Sanitary Police Regulations to Prevent Its Spread. Aust (*Deutsche Vierteljahrsschr. f. Offentl. Gesundheitspfl.*, Zweites H., 1899) contributes a very able and exhaustive paper on the subject, concluding with the following summary: *Origin of diphtheria.* (1) Diphtheria is caused by the Klebs-Löffler bacillus, which possesses a distinct behavior, and can be inoculated from man to animal, producing pathognomonic changes at the site of inoculation and internal organs as well as post-diphtheritic paralysis. (2) This bacillus is found in laryngitic croup, in various forms of simple sore-throat, in fibrinous rhinitis, in membranous conjunctivitis, also, occasionally, in the throat of healthy persons. (3) This bacillus possesses an unusual resisting power and is present for a long period in the throat of convalescents. (4)

There is a pseudo-diphtheria bacillus which produces a disease resembling clinically diphtheria, but possesses no virulence on animals. (5) The so-called scarlet-fever diphtheria is a mixed infection of diphtheria bacilli with other micro-organisms, especially streptococcus pyogenes. (6) Diphtheria of open wounds is, as a rule, produced by the diphtheria bacillus.

Spread of diphtheria.—(7) It is an eminently contagious disease. (8) The channels for its spread are various, the chief being: (a) The infection is carried from one person to another; (b) it is carried by immune to susceptible persons; (c) by means of clothes, wearing apparel, upholstered furniture, carpets, books, toys, etc.; (d) by food, especially milk, bread, etc.; (e) by domestic animals. (9) Especially favorable for the spread of the disease is the assemblage of children, as in schools and similar institutions. (10) Certain customs are also responsible for its spread, such as visiting the bereaved, funeral celebrations, carrying the dead in open coffin, distributing things used by the one who died from diphtheria as tokens. (11) The transmission of the bacillus by the air has not been as yet satisfactorily established. (12) Not all persons are alike susceptible to the infection; certain individuals possess antitoxic substances in their blood. (13) Once having had the disease, the immunizing substances in the blood are increased; similar results are obtained, for a short time, by the injection of antitoxin. (14) Children suffering from chronic diseases, especially tuberculosis and congenital syphilis, have a greater predisposition to diphtheria. (15) Locality plays a very important role in its spread, inasmuch as the bacilli will best thrive and gain in virulence in localities surrounded by bad sanitary conditions. The bad influence of dark, damp dwellings, unsanitary closets and drainage is well established. (16) Certain climatic conditions influence the virulence of diphtheria.

Prophylaxis in diphtheria.—(17) Measures against diphtheria should be instituted before the disease breaks out. To these belong: (a) General cleanliness; (b) sanitary arrangements of the premises; (c) proper dwellings, schools and hospitals; (d) special dead-houses to keep those who died of diphtheria, with their compulsory use by the people; (e) the propagation of knowledge of hygiene among the people; (f) special care to increase the individual immunity by invigorating the body. During epidemics the following measures should be adopted: (a) Compulsory notification by physicians and attendants; (b) precise diagnostication, by the aid of the bacteriologist if possible; (c) careful isolation of the sick in their own houses or in well-established hospitals—eventually compulsory removal to the latter; (d) exclusion of the children of the infected family as well as those of the neighbors from school attendance until the disease is well over; (e) prevention of close association and assemblage of children; (f) thorough disinfection of the sick room and everything that came in contact with the contagion—articles of slight value should be destroyed by fire; (g) regulation of the transportation of the sick; (h) special regulation for the burial of the dead; (i) extensive employment of antitoxin as both a curative and prophylactic agent; (j) the institution of a personnel of nurses who fully comprehend the necessities of hygiene. (18) To accomplish all this, the co-operation of a well-informed people is especially indispensable.

SURGERY.

UNDER THE CHARGE OF

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The Lateral Route for the Removal of Cervical Growths. Holmes (*Inter. Clinics*, Vol. II., 9th Series) states that the lateral incision is, as a rule, preferable in operating upon tumors, and collections of pus and blood that approach the median line of the neck. This lateral incision is made along the posterior edge of the sterno-mastoid muscle, and affords greater room, better drainage, and a lessened liability of injuring the pre-tracheal muscles and the vessels and nerves supplying them than the customary median incision. The only nerves divided are a few of the descending branches of the superficial cervical plexus, and for all deep-seated growths below the upper margin of the thyroid cartilage this incision affords the more satisfactory means of approach. The sterno-mastoid muscle having been retracted toward the median line, the prevertebral fascia forms an excellent posterior boundary to the operative field, while incision of the pre-tracheal fascia affords access to the anterior part of the neck. The author has had satisfactory results in operating for abscess, sarcoma, and bronchocele through this incision.

An Abdomino-Sacral Method for the Removal of Rectal Carcinoma. Summer (*Med. Rec.*, Aug. 12, 1899) describes a method employed by Kraske in Freiburg for the removal of a malignant tumor, situated high up in the rectum and adherent to the uterus and sacrum. An abdominal incision, 2 fingers in breadth, above and parallel to the left Poupart's ligament, was first made; the abdominal cavity walled off, the peritoneum and meso-rectum divided, a large branch of the superior hemorrhoidal artery ligated, and the gut liberated from its surrounding. The cavity was then thoroughly packed with gauze and the typical Kraske sacral incision made, the involved intestine being readily resected. This operation permits the more complete removal of infiltrating malignant tissue and is especially applicable to highly situated and adherent carcinoma of the rectum.

Hernia Following Operation for Appendicitis. Harrington (*Bost. Med. and Surg. Jour.*, Aug. 3, 1899), after a personal examination of 236 patients operated upon from 9 months to 9 years previously, reaches the following conclusions: "Hernia and bulging occur frequently after

operation for appendicitis, and result from the separation of muscles and other tissues in the scar. They are very common when drainage has been used. The muscular and tendinous fibers should not be transversely cut in any appendix operation unless it is unavoidable. As little drainage material as safety will permit should be used. When drainage is necessary, the wound should be closed as far as possible with sutures and the drainage removed as early as safety will permit. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer. Stout belts and trusses are of little value, and may even do harm. The abdominal muscles from the earliest period possible after operation should be developed by appropriate exercises. If hernia or marked bulging appears, operation for cure is safe and satisfactory." In the 236 cases the relation of the hernia to the form of incision is well illustrated statistically:

	Incisions.	Punctiform hernia.	Bulging in wound.	True hernia.	
Closed	85	0	2	3	= 6%
Partly closed	88	5	29	11	= 51%
Open	63	5	21	13	= 62%

A general abdominal bulge of the right side was also found in 7% of the closed incisions, and in 45% and 46% respectively of the partly closed and open incisions. This was attributed to faulty muscular union.

A Plea for Earlier Operation in Knee-Joint Tuberculosis.

Jonas (*Jour. A. M. A.*, Aug. 12, 1899) found that of 40 cases of knee-joint tuberculosis under his care, 7 came to resection of the joint surfaces and 2 to amputation. The remaining 31 cases yielded to medicamental and mechanical measures, associated in some instances with joint puncture and evacuation, followed by irrigation or injection, etc. If after 2 or 3 months of mechanical treatment, no improvement is noted, the author's plan is to explore the joint with the finger, and if limited lesions are found to irrigate; if small bone lesions are present to curette; and if exterior articular lesions exist to excise the joint. Of 7 of the author's cases 6 gave excellent results, the poor result in the remaining cases being attributed to delay. All were adults. The author advocates the transverse incision; finds drainage, as a rule, unnecessary and discards all retentive appliances except a plaster of Paris bandage or Volkmann's posterior splint. Early exploratory incision is especially advised as a harmless and most useful procedure.

Total Obstruction of the Bowel Lasting Thirty-four Days.

Fell (*Ind. Med. Rec.*) describes a case of impermeable stricture at the sigmoid flexure, for which operative intervention was refused, with the result that the patient passed 34 days without fecal evacuation and practically without food, death finally resulting. The abdomen became greatly distended, and assumed a bluish mottling. *Post-mortem*, the colon was found to measure 18 inches in circumference above the stricture and contained liquid feces and much flatus, while the stomach and small intestines were found to be empty and contracted.

LARYNGOLOGY AND RHINOLOGY.

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L'Asthme des Foins et les Rhinites Spasmodiques Vaso-Motrices. (Hay Fever, Hay Asthma, and Spasmodic Vasomotor Rhinitis.) Molinie (*Gaz. des Hop.*, No. 52, 72d year) reviews these affections in apposition, finally unifying them, except in their etiologic factors, the essential difference being the periodicity of the former as contrasted with the irregular and sporadic occurrence of the latter. The history, symptomatology, etiology and pathology are clearly and succinctly given. Only the desire to give that which is most useful compels us to pass directly to the treatment of these affections. This should consist in the breaking of as many links as possible of the chain of pathologic conditions surrounding the condition. Any diathesis should be combated. For plethora, a rigid and limited dietary should be ordered, alcoholic drinks interdicted, moderate exercise enforced, and purgation and blood-letting should be resorted to. Should eczema be encountered, it should be relieved by the internal administration of arsenic. Colchicum should be ordered for the gouty, and also a special hygienic therapeutics. To the neuropathic should be administered such tissue builders as the glyco-phosphates, fluid extract of kola, and valerianate of ammonia. Health resorts, medicinal springs or baths should be recommended to the arthritic, obese, constipated, eczematous, hemorrhoidal or those below par for any reason. The active irritant cause should be removed when possible. As a local treatment, some one (Carl Genth) has advised applications of corrosive sublimate, 1:3,000 to the nasal mucosa. The intra-nasal application of vaselin, pure or with menthol, has given ease. Chlorohydrate of cocain in solution 1:30, or used with an inert powder 1:10, has given good results; but the necessity of increasing the dose and the consequent danger of intoxication or the acquiring of the cocain habit rendered this procedure dangerous. Lightwitz has recently used orthoform with as great success as cocain, and without the danger of intoxication. Agents possessing vasomotor constrictive power, as the extract of suprarenal capsule, are of use. But, among the local treatments, a special place should be reserved for nasal cauterization, as much for the polemics this method has aroused as for the result it has procured. This treatment obtained considerable vogue after Hack's work on nervous reflexes of nasal origin, when he demonstrated that certain forms of asthma could be cured by ablation of nasal lesion. Since this time the operation has been much abused. There are certain nasal lesions, such as polyps, deviation of the septum, hypertrophy of the turbinates, etc., in which operative interference is absolutely indicated to insure nasal breathing, if nothing more. In

others, however, what should be our procedure? We have shown that at least 50 to 60 % of cases are benefited by cauterization. The benefit derived may be accounted for in one of three ways: (1) In some cases the sensitiveness of the mucosa is thus lessened, and dust, luminous impression, dry temperature, living near the railroad, fail to affect their usual results. (2) In others, cauterization has a revulsive action, inhibiting and counterbalancing the influence of the usual excitants. (3) Finally, we think the treatment acts by suggestion in the nervous. The cautery may be applied in various ways. After cocaineization the inferior or middle turbinate may be the seat of linear cauterization, surface cauterization or igni-puncture. Sajous has used applications of glacial acetic acid instead of the cautery, with good results. In rebellious cases Moure (of Bordeaux) has obtained results by decortication of the inferior turbinate. [Note.—The numerous remedies suggested above show conclusively that each individual is a law unto himself, necessitating the special study of individual cases, and that no one treatment will answer for all.]

Treatment of Hay Fever. Douglas (*Med. Rec.*, Vol. LV., p. 474) divides cases of hay fever into two grand classes, those with nasal lesions and those free from these lesions. The treatment is divided into (1) Treatment of the cause—many patients doing well in high altitudes or on islands about 20 miles from the mainland. Vasomotor disturbances should be treated by daily cold sponging or spinal douches and the internal administration of small doses of quinia and digitalis. Nervines have not been of use, and opium is warned against. Proper use of exercise, rest and change of occupation and environment, with care as to diet and elimination, will aid materially in the treatment. (2) Local and general treatment of the attack. The membrane should be sprayed with a 1% solution of cocain, followed by a douche of salt solution 1 dr. to 1 pt. of water at a temperature of 106° to 114°. Two quarts of the solution should be used with the bag 6 inches above the head, and the patient instructed to breathe deeply and freely and to avoid any effort at swallowing. After the douche, pledgets of cotton, saturated with 4% cocain, should be packed against the offending parts for 4 minutes and then removed. After this silver nitrate 10 grs. to the ounce, or phenol camphor (2 parts camphor, 1 part carbolic acid), or Clarke's solution, which is as follows:

R Corrosive sublimate,	1 gm.
Quinin hydrochlorate,	13
Glycerol carbolic acid (B.P.),	15

The home treatment should consist in the use of the hot douche. After subsidence of the acute symptoms, an oily spray, as 2 gms. of menthol, 1 gm. of eucalyptol in 1 fl. oz. of albolene liquid may be used. Suprarenal extract internally has been found almost specific in the disease, whether used internally or locally in spray form. The action is always satisfactory. The tablets should be given to adults every 2 hours, day and night, until some prostration or dizziness is felt, or until examination shows the vasomotor paralysis has been controlled. After this the remedy should be given every 3 to 6 hours, and finally 2 doses a day should be kept up throughout the hay-

fever season. If the spray is employed, it should be used every 3 hours. During the intervals between attacks, the nasal defects should be corrected. In the debate following the paper, sodium salicylate or Lugol's solution of iodine, 5 to 20 drops well diluted in water, or the iodids were said to act well if there was much congestion of the pharynx. A syphon of seltzer could be used instead of the alkaline douche.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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The Surgical Treatment of High Myopia. Würdemann (*Ann. of Ophthalmology*, Apr., 1899), after an exhaustive review of the literature of this subject, and the report of several cases in which extraction of the lens was performed, states as advantages of operation: (1) Increase in the visual acuity; (2) larger retinal images; (3) enlargement of the visual field; (4) increased range of vision for near work with correction; (5) reduction of strength of glass, and hence in the bulk and optic defects so common in strong lenses; (6) displacement of pupil nearer the nodal point. The author gives the following resumé of the subject: (1) Surgical treatment of myopia should be limited to those cases over —12.0 D, who suffer great inconvenience from their correcting lenses. The ideal cases for operation are those of —17.0 D to —18.0 D. (2) The operation is mainly indicated in young adults. (3) Cases having active disease and changes in the ocular structures, such as progressive myopia, choroiditis, fluidity of the vitreous or detachment of the retina, are not applicable. (4) The dangers are offset by the advantages. The present status of the operation among ophthalmologists generally, especially in this country and in Great Britain, will not warrant Würdemann's last conclusion. Certain it is, that the danger of retinal detachment and other bad consequences of removal of the lens from a diseased and distorted eyeball are so serious that they awaken grave doubts as to the advisability of such a radical procedure in the minds of American oculists who have patients wearing lenses of —S. 20.0 D and even higher strength with comparative comfort. Already several cases in which great improvement was expected from the immediate optical results of operation have been reported as failures from subsequent retinal detachment.

The Etiology of Iritis. H. H. Brown (*Ann. of Ophthalmology*, Apr., 1899) believes that a majority of all cases of iritis, ranging from 55 to 65 %, are due to syphilis, and a smaller proportion, varying from 10 to 20 %, may be accredited to arthritic toxins. The small percentage left is caused by various constitutional and infective disorders, with also a strong probability of the existence occasionally of a true sympathetic or neurotic iritis, entirely distinct in its origin from any infectious cause. Traumatic iritis is excluded in the paper. Brown also thinks that there is a wide range for speculation as to the mode of action of infections of the iris, but at the

present time the facts seem to point to the action of bacterial products or toxins, rather than to that of the germs themselves. In only a few cases have characteristic bacteria been found directly in the inflamed iris; in others only the ordinary pus cocci are present to indicate a secondary infection.

Oculo-Motor Paralysis from Typhoid Fever. G. E. de Schweinitz (*Jour. of Nerv. and Mental Dis.*, June, 1899) reports a case of this nature in a man of 22. About one month after the initial symptoms, and after convalescence seemed to be established, the patient was attacked with a relapse, and on the third day showed complete right oculo-motor paralysis, with ptosis. The patient recovered from the illness and at the time of report, 6 months later, by strong effort he could overcome the divergence, while upward rotation had become normal and downward rotation had gained 10° . These cases generally occur during convalescence. Dilatation of the pupil and paresis of accommodation are not uncommon, while mydriasis without cycloplegia with normal vision may be the result of irritation of the sympathetic. Paralysis of the extra-ocular muscles is much rarer, and in the absence of intracranial complications seldom occurs in the height of the disease. Certain muscular paralyses have occurred at long intervals after typhoid fever, but the connection between the palsy and typhoid poison in such cases is very doubtful. Kniess believes extra-ocular palsies from typhoid fever are due to nuclear lesions, and attributes them to a chronic nephritis, which he thinks is a frequent sequel of typhoid fever. West believes that in mild attacks of typhoid in children, accompanied by temporary strabismus and retraction of the head, there may be a causal basilar meningitis of slight severity. True meningitis is very rare. According to the Munich record, quoted by Osler, it occurred only 11 times among 2,000 cases. Excluding meningitis, these cases of extra-ocular palsy after typhoid may be attributed to the poison acting directly upon the nervous system, affecting, for example, the oculo-motor, precisely as it may cause neuritis in the extremities.

Post-hemorrhagic Blindness. Theobald (*Johns Hopkins Hosp. Bull.*, May 1899) reports a case of atrophy of both optic nerves, following severe hemorrhage of the stomach in a man of 57. After an inquiry into the literature of the subject, and a careful consideration of the case under his observation, he concludes: (1) That the weight of evidence afforded by the ophthalmoscope points to thrombosis of the central retinal artery as the usual cause of blindness which occurs in post-hemorrhagic anemia. (2) That the resistance offered to the already enfeebled blood current in the central retinal artery by the intra-ocular tension is an important etiologic factor in determining this result. (3) That, in exceptional instances, the ophthalmoscope indicates that thrombosis occurs not in the artery but in the central retinal vein. (4) That, in other exceptional instances, it may be that the loss of sight and the ophthalmoscopic changes which accompany it are the result of a hemorrhagic or serous effusion into the optic nerve or its sheath (Samelsohn). And here, again, the obstruction and damming back of the blood current in the central retinal artery by the intra-ocular tension probably have much to do with bringing about the result.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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The Treatment of Secondary Syphilis. Taylor (*N. Y. Med. Jour.*, Apr. 8, 1899) strongly urges a more vigorous method of treatment for syphilis, somewhat after the Ricord plan, in vogue prior to 1870, rather than the prolonged "tonic" treatment, which he terms "Emasculated, narrow-gauge, stencil plated." Four reasons are given why treatment should not be instituted until the constitutional evidences of the disease are present. In brief, these reasons are as follows: (1) That by a preliminary course of mercury, the system becomes accustomed to the use of the drug, and its potency as a therapeutic agent is impaired considerably at a time when we need it most, *i. e.*, at the first outbreak of skin lesions. (2) Early treatment does not suppress evolution of the secondary manifestations, but simply retards the orderly course of the disease. (3) It is important that the patient should see for himself that he has syphilis in order to be thoroughly convinced of the necessity for treatment. (4) Errors in diagnosis of genital lesions being so common is another important reason for deferring treatment until secondary manifestations shall appear. Taylor advocates for the first 6 months a vigorous course of mercury, using alternately the protiodid in $\frac{1}{2}$ gr. doses internally 3 times daily and the use of inunctions. This alternate treatment should be kept up continuously for 6 months, at the end of which time a respite from all treatment is taken for 3 weeks. At the expiration of this time the treatment must be kept up for 3 months longer, and it should consist of alternations of the inunction treatment and the dosage with a mild or strong mixed treatment. This method should be carried out, with intermissions when no treatment is pursued, during the second year. Taylor believes that the disease treated in this manner can be cured in $2\frac{1}{2}$ years.

A Grooved Perineal Cannula to Be Used as a Guide in Performing Perineal Sections in Cases of Urethral Obstruction. Guitéras (*N. Y. Med. Rec.*, July 1, 1899). This instrument, devised upon the plan of the ordinary trocar and cannula, is intended to be used in tapping the deep urethra behind an impermeable stricture, thus doing away with the uncertain "stabbing in the dark" necessary in the Cock's operation. It consists of a cannula $4\frac{1}{4}$ inches, and handle $2\frac{1}{2}$ inches, and a trocar $4\frac{3}{4}$ inches long. The indications for the use of this instrument are enumerated by the author as follows: (1) Cases of impermeable stricture with retention, in which an immediate radical operation is demanded; (2) cases of

ruptured urethra; (3) cases of extravasation of urine; (4) cases of excessive urinary abscess; (5) cases of perineal cellulitis; (6) fracture of the pelvic bones with pressure upon the urethra. In tapping the bladder in the deep urethra an incision is first made in the perineum in front of the stricture, as in the ordinary operation of external urethrotomy. With a finger in the rectum, touching the apex of the prostate gland, the operator pushes the instrument downward and backward through the stricture until the point is felt by the finger in the rectum. If there is retention of urine, the trocar can be removed and the bladder readily emptied.

The Signs of Inherited Syphilis. Dawborn (*N. Y. Med. Jour.*, Apr. 8, 1899) gives 27 signs of hereditary syphilis, of which the most characteristic are: (1) The "old man" appearance of the face, together with the sallow color of the skin. (2) Bullous or pemphigoid eruptions about the buttocks. (3) Condylomata at the muco-cutaneous junctions. (4) Snuffles. (5) Osteochondritis, involving the shafts and epiphyseal junctions of the long bones. (6) The temporary teeth are cut very early, of bad color and liable to a crumbling decay. (7) Irregularities, and hypertrophies of bony development. The nose shows the characteristic deformity in the face, the bridge being so often destroyed by necrosis.

The Differential Diagnosis of Syphilitic Eruptions and Signs in the Skin of Former Syphilis. Fox (*N. Y. Med. Jour.*, Apr. 8, 1899) calls attention to the fact that in nearly every case of cutaneous syphilis, the diagnosis of the disease is written upon the skin. Among the characteristic features of the syphilodermata, he mentions color, absence of itching, and peculiarities of configuration. The early eruptions are symmetrical, occurring on both sides of the body, and have a distinct tendency to grouping in circular patches. As regards the question whether a patient has ever been syphilitic, Fox considers the cicatrices of old lesions found on the body to be of greatest value. A number of smooth, round, white depressed cicatrices, grouped together or in a circle, constitute a permanent record of syphilis, throughout the lifetime of the patient.

The Bacillus Icteroides Confirmed. Wasdin and Geddings, of the Marine Hospital Service, detailed November 8, 1897, to investigate in Havana the nature of yellow fever, have sent in a report confirming the claim of Sanarelli that the bacillus icteroides is the cause of yellow fever. They determined that infection occurred through the respiratory tract, the bacilli first colonizing in the lungs. By placing experimental animals under natural conditions of infection, it was also discovered that Sanarelli's bacillus had a natural specificity that was, moreover, not shown by the bacillus X of Sternburg, the bacillus of Havelburg, or the bacillus coli communis. As the organism has been found to be very susceptible to dehydration but not to cold, the cessation of yellow fever epidemics in cold weather is attributed by the Commission to the lessened humidity usually accompanying the cold weather.

GYNECOLOGY.

UNDER THE CHARGE OF

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AND

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The Use of Parotid-Gland Extract in the Treatment of Ovarian Disease. Mallett (*N. Y. Med. Jour.*, Aug. 26, 1899), having treated 20 cases of ovarian disease with parotid-gland extract, summarizes the results of his experience as follows: (1) It has seemed to relieve the pains of dysmenorrhea in all cases, without regard to the supposed cause or pathological condition present, to a greater extent than any of the numerous so-called uterine sedatives, all of which he has used. (2) It relieves those dull, aching pains referred to the back and ovarian regions, usually designated by those familiar though vague and unsatisfying terms, reflex pains, ovarian neuralgia, etc. (3) Menstruation, when deranged, seems to become more regular as to periodicity, less in amount, and shorter in duration. (4) During its exhibition, pelvic exudate seems to soften and become absorbed more rapidly under abdomino-pelvic massage. (5) The general health, strength, and spirits seem to improve during its use, and those dull headaches which constitute such a persistent and annoying symptom in these cases are almost invariably relieved, and in some disappear entirely. (6) The only contraindication that he has thus far met with to its use has been in cases of the artificial climacteric (following double salpingo-oophorectomies), in which cases the flashes of heat and cold were made distinctly more frequent and severe.

Saline Irrigation in Abdominal Operations. Hawkins-Ambler, of the Samaritan Hospital, Liverpool (*Brit. Gyn. Jour.*, Feb., 1899), discusses in detail the use of saline irrigation in abdominal operations, and says, in conclusion, that it is nearly always harmless, and nearly universally useful if the following precautions be taken in its use: (1) Use rather normal saline solution than plain hot water. (2) The temperature of the fluid should be little above blood heat, unless in cases of severe hemorrhage, when irrigation should be confined to the affected area and the stream shut off as far as possible from viscera not implicated. (3) Avoid irrigation in septic cases. (4) It should not be too prolonged, since a sodden peritoneum is likely to suffer damage as an absorbing agent, if it be not irritated into such a suspension of this function that blood and plasma might be left unabsorbed for a dangerously long period. (5) Where not

required for cleansing purposes or as a hemostatic, equally good or better results will be obtained by pouring into the abdomen a quantity of normal sterilized saline solution, or by injecting it into the rectum.

Epithelioma of the Urethra in a Female. David (*Jour. des Sci. Med. de Lille*) reports a case of this disease successfully treated by Prof. Duret in the Hospital of Lille, which the patient entered March 6, 1899, suffering very severe pain in the base of the bladder. Micturition had been impossible for three days, but catheterization, though difficult, relieved the pain somewhat. The next day a careful examination disclosed an epitheliomatous ulceration beginning below the clitoris and extending backward to within 2 or 3 cm. of the uterine neck. It seemed that all the middle half of the vulvar commissure and two-thirds of the anterior wall of the vagina were involved. In the midst of this large, thick, hard ulcer, in the anterior vaginal wall there existed a fissure through which the catheter penetrated the bladder. The diagnosis of epithelioma of the urethra was made, and a radical intervention at once decided upon, the operation being performed some days later. The surgeon made an elliptical incision in the postero-inferior cavity, of which the middle part was below the clitoris while the extremities passed the limits of the neoplasm on both sides of the labia majora. Then he incised successively all the tissues level with the pubic arch, which permitted a detachment of the anterior portion of the urethra. Seizing all these with the clamps of Museux, it was easy with the forefinger to detach and draw forward the organ and thus determine the extent of the diseased tissue. He next cut the urethra even with the neoplasm in the vicinity of the neck of the bladder, and continuing the dissection below so as to separate the anterior vaginal wall from its vesical connections, he excised the degenerated part about 2 cm. from the vesical neck and removed the entire epithelioma. By using the finger it was found there remained about a fourth part of the posterior urethral canal. This was drawn forward under the pubis and held in place with 3 or 4 silk sutures. To this was sutured the mucous membrane of the vestibulé and labia minora. What remained of the vaginal wall was sutured under the circumference of the urethra, the latter being thus directly joined to the mucous membrane of the vagina and vestibule. A catheter was allowed to remain and the ordinary precautions were taken. The sutures were removed on the ninth day and the catheter on the fourteenth. The patient left the hospital some days after, very well satisfied with her condition, being able to retain the urine about 4 hours. The treatment, while it relieved the intense pain, gave a scarce hoped-for result, since the ablation was complete. This radical treatment is considered much preferable to any palliative means, such as caustics, which give little or no good results. The method of Zweifel, which closes the urethral orifice and creates an artificial urethra under the pubis, is very complicated and only facilitates micturition without preventing the progress of the disease; but the operation of Melchiort employed in this case is superior in that it permits the easy and complete excision of the neoplasm.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

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Rupture of the Intestine in the Newly-Born. Ciechanowski (*Vrtljschr. f. gerichtl. Med.*, Berlin, Oct., 1898) reports a case in which there was a rupture of the transverse colon in a newly born child. The mother was healthy and a 3-para. The vertex presented and the child was born with a single severe pain. The child died with symptoms of peritonitis after 4 days. Several stools were passed during this time. After death there was found a rupture of the transverse colon on the left side. Similar cases have been reported by Browicz, Paltauf, and Zillner. The author is of the opinion that, as there was no external violence in this case, the strong contraction of the uterus upon the highly distended large intestine was the cause of the rupture.

Injuries of the Infantile Eye Occurring During Delivery. Cramer (*Cent. für Gynecol.*, July 8, 1899) describes a case in which the pelvis was ankylosed and premature labor was induced by introducing bougies into the uterus. The colpeurynter was used to dilate the os. The waters escaped largely and there were many vaginal cicatrices present from previous labors, so that it was necessary to apply the forceps and use considerable force. After the delivery, it was found that the child's left eye was bleeding freely. Examination showed a collapsed eyeball and a fracture of the frontal bone just above the eye, the forceps being the cause. With care infection was avoided, and a phthisis bulbi was the only result. The writer attributes the accident to the immature fetal bones, the delivery being at the eighth month, and also to the presentation, which was frontal. He was unable to fracture the orbit of a dead child with the forceps, even though using all his strength.

Syncope after Delivery as an Excuse for the Death of the New-Born Child. Perrin de la Touche (*Rev. Prat. d'Obstet. et de Gynecol.*, June, 1899) reports a case which came under his observation that was undoubtedly true, although, as a rule, unless profuse *post-partum* hemorrhage has occurred, these cases are not believed by the authorities to be true. Many women thus escape punishment for infanticide. The autopsy showed that the child had evidently breathed at first but perished from asphyxia. There were no marks of violence on the child. The woman was all alone when labor set in and she instinctively attempted to enlarge

the vulva with scissors as the perineal stage was reached, on account of the severe pain, and in doing so became unconscious. On regaining her senses, she found the child and placenta between her legs, but dead. The author describes this operation as an "auto-episiotomy."

Tetanus Following Induced Abortion. Turenne (*Ann. de Gynecol.*, June, 1899) writes of a midwife who developed tetanus, although no evidence of a wound could be found until she confessed that she had attempted to produce an abortion on herself by using a catheter and an unsterilized intra-uterine injection. No antiseptic precautions had been used whatsoever, and the disease developed 6 days afterward, death following in 48 hours. Vinay has collected 108 cases of puerperal tetanus, 47 cases of which were connected with induced abortion.

Surgical Treatment of Acute Puerperal Sepsis, with Special Reference to Hysterectomy. Vineberg (*Ann. Gyn. and Ped.*, Vol. XII., No. 9) in a paper with this heading draws the following conclusions: (1) Puerperal sepsis is wound fever, the wound being in the genital canal, and calls for treatment as if it were situated elsewhere, as free drainage, irrigation and removal of any debris or exudate with an instrument. If these means fail, ablation of the diseased organs is indicated. (2) In any case of puerperal sepsis, a thorough search of the whole genital canal should be made, to determine the site of the infection. (3) If this site is in the uterus, curettage, drainage and irrigations are to be used. In 95% of cases this will be all that is necessary. (4) In 5% the symptoms will not yield, and an exploratory laparotomy is then indicated, and total hysterectomy will be necessary in most cases. (5) When collections of pus form and can be reached by vaginal incision or above Poupert's ligaments, no time should be lost in resorting to these measures.

Adherence of Membranes to the Cervix, an Important Cause of Tardy Dilatation of the Cervix. Löhlein (*Cent. für Gynecol.*, No. 19) records a number of cases in which this condition has been the cause of delayed first stage of labor. This adherence is due to a cervical or corporeal endometritis. He advises inserting the finger and detaching the membranes from the wall of the cervix and, if necessary, rupturing them. The adherence of the lower pole of the ovum to the cervix delays the unfolding of the cervix and prevents the descent of the bag of waters, and the consequent dilatation of the internal os.

Expression of the Placenta a Modification of Crede's Method. Budberg (*Der Frauenarzt* H. 160) describes a modification of Credé employed in the Dorpat Maternity Hospital in 1,000 cases with success. The right hand is placed over the fundus, thumb to the front and fingers behind, while the left hand grasps the uterus anteriorly, just above the symphysis. During a pain both hands make compression, the maneuver being repeated with each pain if necessary, the hands remaining *in situ*. With the exception of absolute adherence, this method has never failed.

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Our Seashore Sanitaria.

Fortunate are those invalids, whether infants or adults, who, in the recent hot season, were able to enjoy the luxury of a sojourn by the sea. Though invigorating effects may be obtained on the mountain tops and healing virtues found in the springs—to say nothing of the good results usually experienced by a change from the city into the open country anywhere—there are peculiar charms and extraordinary health-restoring influences at the seashore. On the hottest days, especially, when the wind is from the east or south, the change to any of the nearby coast resorts is something magical, and its rapidly beneficial effects upon many of the sick, when first taken there, particularly upon babies with cholera infantum or entero-colitis and convalescents after operations or wasting diseases, is usually no less marvelous. There is not only a sudden transition from a dangerously high temperature to one that, as a rule, is just pleasantly and healthfully warm in the middle of the day, with a drop in the evening to one that demands woolen clothing and heavy bed-covering, but there is a peculiarly tonic virtue in strong sea air, which rarely fails to bring a sharp appetite, in spite of the most debilitated stomach, and often brings refreshing sleep, even to confirmed insomniacs.

Then the seashore, at most places, shares with the country and mountain resorts generally a far greater exemption from pathogenic bacteria than any of the crowded cities or towns inland. The air taken into the lungs is much more nearly aseptic, and this fact is of inestimable advantage to all persons who suffer from depressed vitality. Even in such a populous seaside sanatorium as Atlantic City, since it has been built upon a narrow island, with the open sea in front and bays of salt water behind, and provided with modern sanitation, the crowds that come and go do not seem appreciably to lessen the purity or invigorating character of the air.

Certain invalids who are less dependent upon the luxuries of civilization may do as well, or better, at the newer and smaller health resorts which

abound now all along the coast on both sides of our great country, and doubtless will soon abound on all sides of all our recently acquired island possessions; but for a very large class of delicate patients the thoroughly equipped modern hotels, with skilled physicians, pharmacies, churches, means of diversion, and other conveniences found in the larger resorts, are, in a sense, indispensable.

Another great enjoyment—and, when properly dosed, valuable therapeutic agency—to be had nowhere except at the seashore, is sea bathing. This is a powerful means of restoring health in debilitated persons which many American physicians do not sufficiently appreciate, probably because to bathe in the fashionable way is quite out of the question for nearly all invalids. But there are many persons who, though they cannot stay in the breakers thirty to sixty minutes every day, as the custom is at most seaside resorts, without disastrous results, would be vastly benefited by five-minute baths on alternate days. And there are others still more delicate who might be rapidly cured of their debility by one-minute dips in the surf every day or two. Such very short sea-water baths are often prescribed by physicians at the resorts on the Mediterranean. Along the New Jersey coast the bathing is particularly enjoyable during the latter part of the summer, and even to the end of September.

With the beginning of another century, we shall probably see an active campaign begun in all civilized countries against tuberculosis; and the first protective measure will be the suppression of the spitting nuisance. The first steps in this direction have already been taken, and the public press has been educating the masses in a rudimentary way to the truth that spitting is not only filthy and vulgar, but a positive menace to health.

The authorities of several Western cities have recently defeated ordinances making expectoration on sidewalks and in public buildings or vehicles a finable misdemeanor. This is the usual fate of all measures which attack abuses so ancient that they have come to be looked upon as inalienable rights. Were one of the patricians of the Roman Empire in the days of Hadrian, Trajan or the Antonines to come among us, he would be surprised at our vulgarity and that the streets are not full of fighting men and women, for in his time it was an insult to spit in another's presence.

Paris has begun a systematic investigation of tuberculosis from house to house with a view to its limitation, and our own large cities are contemplating similar measures. The first necessary step for the limitation of this and other infections will be the prohibition of public expectoration, a custom filthy and hostile to all hygiene and propriety, and the suppression of which is so manifestly desirable from every consideration.

At its last annual meeting, the Indiana State Medical Society adopted a resolution setting forth the necessity for properly educating the people at large as to the dangers of tubercular infection, and providing to this end literature, warning the public of the nature and danger of its contraction. Judicious literature sent out by State Boards of Health will, in this way, have a far-reaching and potent effect such as nothing else can in calling attention to the simplest matters of public cleanliness.

Letters are being received from physicians, both in America and Europe, expressing much appreciation of the Talks to General Practitioners, which form so unique a feature of the reorganized INTERNATIONAL. During the coming year this feature will not only be continued, but enlarged. The intention is to make this ultimately include a series of plain, practical discourses on each of the specialties; but the difficulties in the way of carrying this idea out are greater than might be supposed. Many of the best teachers are writing books, and all of them are naturally overburdened with practice, so that they cannot easily spare the time required. And some of those who have the time, literary ability and zeal, and might be secured, have not had the necessary experience to make their talks as authoritative and valuable as would be desirable. We are trying to keep up the standard, and it is expected that a number of the different series will later on be collected and republished in book form.

**Talks in
Prospect.**

Prof. Thomas promises for future numbers two further talks on the very important subject of the Treatment of Syphilis, and following these, one or more on the Diagnosis of Obstructive Diseases of the Urethra. Dr. Pyle's interesting talks on forms of eye disease that physicians generally are often obliged to treat will be continued. Prof. Kyle's new work on the nose and throat having been finished and published, he will have more time and energy now for the continuation of his valuable discussions of so much of rhinology and laryngology as is practicable for family physicians.

Prof. Montgomery will shortly contribute further pages from his immense experience in practical gynecology. Dr. W. Wayne Babcock has promised a series of talks on numerous points in the technique of testing for pathogenic micro-organisms. Prof. Ayres will contribute further practical discussions on obstetrics. Prof. Van Harlingen and Dr. Jay F. Schamberg will be heard from again on matters of importance in dermatology. Prof. John Madison Taylor will finish his instructive series of talks on pediatrics. The editor will discuss the diagnosis and treatment of chronic asthenic gastritis and later take up cancer and ulcer of the stomach. The exceedingly important subject of the treatment of displacements of the stomach, as well as of motor insufficiency in its various grades up to gastrectasis or gastric dilatation, will be fully considered also in future numbers.

We hope to have further contributions from Dr. Leonard on surgical subjects and also from Dr. Robin.

A number of new men not hitherto identified with the INTERNATIONAL are expected to be heard from in the way of these practical talks.

EDITORIAL MENTION.

ENGLAND has fortunately a means of assuring the value of antitoxic serum offered for sale by the various laboratories. According to regulations approved by the Laboratories Committee (*Pharm. Jour.*, April 1, 1899) of the Royal College of Surgeons the serum is examined—(a) For potency, *i.e.*, for number of antitoxin units per c.c.; (b) for any excess of antiseptic; (c) for the presence of micro-organisms. It may be sent to the laboratories in bulk, and may there—after being tested and bottled—be labeled with the laboratories' certifying labels. When a batch has been bottled away from the laboratories, the bottles are to be counted and samples selected by the laboratories' assistant, who, after the serum is tested, is to provide labels to be affixed to the bottles and to the cases in which they are contained; these are to be affixed in his presence. The regulations have been drawn up, not with the idea of questioning the *bona fides* of any firm, but simply with the object of affording to the public a guarantee that the testing and certification are not merely nominal.

LINDSAY (*Brit. Med. Jour.*, May 13) used the antistreptococci serum in a recent epidemic of small-pox in the endeavor to lessen the pustulation. Ten c.c. of the serum, administered for three days, certainly appeared to lessen the severity of the toxemia and to be of decided general value.

THE trustees of the University of Pennsylvania have appointed Dr. James Tyson to the professorship of the Theory and Practice of Medicine, the position so long and honorably filled by the late Dr. William Pepper. Dr. John H. Musser and Dr. Alfred Stengel have been made Professors of Clinical Medicine in the same school. All these gentlemen have been distinguished teachers in the University for many years, and all are well known to the medical profession as authors of standard text books.

THE Jefferson Medical College, of Philadelphia, will greet its students this fall in an imposing new building at the northwest corner of Tenth and Walnut Streets. This old and celebrated institution has taken a new lease of life.

BOOK-REVIEWS.

PRACTICAL DIAGNOSIS: THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE.

Fourth edition, revised and enlarged. By Hobart A. Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Illustrated with 205 engravings and 14 colored plates. Philadelphia and New York, Lea Brothers & Co. 1899.

The appearance of a fourth edition of this work within three years will not surprise those best acquainted with it. American physicians possess in a high degree the practical traits which are characteristic of the nation, and therefore so practical a treatise as this by Prof. Hare appeals to them most strongly. The skilled diagnostician, who is thoroughly familiar with the symptoms and physical signs of all the diseases he is called upon to study or treat, has little use for any hand-books on physical diagnosis, and when he does consult one, it is usually to fortify himself regarding some detail or refinement in the signs which the usual methodical treatises, with their pathologic classification of diseases, will furnish him most satisfactorily. But it is sinners, not the righteous, to whom the clergy are especially called to preach; and it is for those little skilled in diagnosis that books on the subject are especially written. For these the arrangement of Prof. Hare's work in classifying by symptoms rather than by diseases is most helpful. Considering the multiplicity and complexity of specialties in medicine in these modern days, putting it entirely beyond the power of any one man to master all, or even to obtain a fair knowledge of all the more important ones, it is remarkable that the author should have succeeded so well in describing not only the symptomatology but also many of the physical signs and chemie and microscopic findings characteristic of diseases of the lungs, heart, liver, stomach, intestines, skin, nervous system, etc. Under the circumstances it is surprising, not that a few trifling slips have been made, but that so very few inaccuracies are discoverable. On page 341 the word *right* was printed inadvertently, no doubt, when *left* was intended in the sentence. "Normally, the greater part of the stomach will be found to the right of the middle line." The accompanying illustrations represent the organ with entire correctness. On page 348, in describing Uffelmann's test for lactic acid, it is stated that a yellow color will be developed in case this acid be present, whereas only a greenish or citron yellow color certainly indicates lactic acid. This is a somewhat important point, since the diagnosis of gastric cancer sometimes turns upon the shade of color obtained by the test, and an ordinary yellow color may be developed without the presence of lactic acid. The chapter on "The Abdomen and the Abdominal Viscera" is, on the whole, singularly accurate and instructive for such a general treatise, and will prove most useful to the general practitioner, though we cannot agree with the recommendation on page 346 that the stomach should be regularly washed out before introducing solutions of soda and tartaric acid separately for the purpose of inflating it preparatory to outlining its boundaries by percussion. One of the marked advantages of this most convenient method of delineating the stomach by inflation and percussion (aided by the splash and, when necessary, by auscultatory percussion and friction as well as by changes of position), is that no tube or other intra-gastric instrument is necessary, which is important in the case of a consider-

able number of patients in whom it is difficult or impossible or unsafe to introduce such instruments. Though it is often best to examine stomachs when they are at least comparatively empty, this can be arranged by choosing a time long after a meal. We have discussed this book rather more fully and in some of its features more particularly than is customary in the case of a publication no longer new, because it is a work of exceeding value to physicians in active practice and some of the present readers of the *INTERNATIONAL* are probably unacquainted with it.

B. R.

THE NEWER REMEDIES, INCLUDING THEIR SYNONYMS, SOURCES, METHODS OF PREPARATION, TESTS, SOLUBILITIES, INCOMPATIBLES, MEDICINAL PROPERTIES AND DOSES, AS FAR AS KNOWN; TOGETHER WITH SECTIONS ON ORGANO-THERAPEUTIC AGENTS AND INDIFFERENT COMPOUNDS OF IRON. By Virgil Coblentz, A.M., Phar. M., Ph.D., F.C.S., etc.; Professor of Chemistry in the New York College of Pharmacy, etc. Third edition, revised and much enlarged. \$1. Philadelphia, P. Blakiston's Son & Co., 1,012 Walnut Street.

With the number of the synthetic remedies alone (to say nothing of the organic extracts and antitoxic preparations) increased from about 800 to some 2,000 in 1899, there is a manifest need for such books as this. Just think of 2,000 new drugs or aggregations of drugs claiming to be synthetic compounds, though many of them are known to be mere loose combinations, all dumped into our *Materia Medica* since the introduction of Kairin in 1882! Suffering humanity would be entitled to a deeper sympathy than ever before if even the one-tenth part of all these alleged remedies were in general use. Fortunately, they are not, and do not deserve to be. Still, among them there are some really valuable medicines, and a still larger number probably of very useful local applications, including numerous substitutes for iodoform. One does not need to look very deeply into the book to see that it was written by a pharmacist and not by a physician, since prominence is given to the chemistry and mode of preparation of the drugs, with scant information as to their physiologic and therapeutic actions. However, the energetic manufacturers of these endless preparations are not likely to let us remain in ignorance of any of their claimed therapeutic virtues and Dr. Coblentz has told much that every physician needs to know about their solubilities, incompatibles, etc. The appended chapter on "Organo-Therapeutic Agents" or animal extracts, though much less full than would be desirable, is a valuable addition to this edition.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania, Fellow of the American Academy of Medicine, etc. Containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over 60 extensive tables. Second edition, revised, pp. 518. \$1.25 net. Philadelphia, W. B. Saunders.

The rapid exhaustion of the first edition of this convenient little volume has caused a second edition to appear within the year. The book has been improved by the correction of certain errors and the insertion of new words. This neat little volume may be cordially endorsed as one of the best of the pocket medical dictionaries.

MEDICAL NEWS AND MISCELLANY.

Alcoholism in St. Petersburg. Dr. Grigoryew gives the following statistics: From 1886 to 1897 20,508 men and 2,534 women were treated in the various city hospitals for alcoholism. Died, 543 men and 61 women; 1,620 men and 242 women entered the hospital twice; 3 times, 521 men and 69 women; 4 times, 235 men and 32 women; 5 times, 125 men and 14 women; from 6 to 10 times, 225 men and 26 women; 11-15 times, 35 men and 4 women; 16-20 times, 13 men and 1 woman; 21-24 times, 5 men; 30-34-48 times, 1 man. Out of 16,839 alcoholics entering the hospital, principally during acute attack, 5,320 were single, 8,608 married, 983 widowers, 604 girls, 740 married (women), 425 widows. As to religion, 94.9% men and 91.8% women were orthodox-Christians; 3% men and 4.6% women, Catholics; 8.5% men and 3.6% women, Lutherans; 0.2% men, Mohammedan; 0.1%, Jews; 0.3%, sectarian. As to age, 10 boys were from 6 to 10; from 11 to 15, 28 boys and 3 girls; from 16 to 20, 404 men and 36 women; from 21 to 25, 1,349 men and 39 women; from 26 to 30, 2,818 men and 289 women; from 31 to 35, 3,013 men and 252 women; from 36 to 40, 3,062 men and 380 women; from 41 to 45, 1,783 men and 241 women; from 46 to 50, 993 men and 192 women; from 51 to 55, 471 men and 112 women; from 56 to 60, 352 men and 72 women; from 61 to 65, 165 men and 33 women; from 66 to 70, 97 men and 20 women; from 71 to 75, 21 men and 2 women; from 75 to 80, 3 men and 3 women; 81 and over, 2 men.—*Vratch.*

PRESCRIPTIONS BY NOTED THERAPEUTISTS.

SUPERFLUOUS HAIR.

℞ Barii sulph.,..... 3 i p.
Zinci oxidi,..... 3 iv
M. S. Make paste with water, apply
3 minutes, then wash off.

FOR COARSE HAIR.

℞ Calci Hydrat.,..... 3 i p.
Orpiment,..... 3 iii
Amyli,..... 3 i
Aquæ calcis, q.s.

M. Ft. Pasta

S. Spread in a thin layer, scraping
off the softened hair with a dull blade.
Wash off when burning becomes
intense and apply soothing ointment.
—McCALL ANDERSON.

BURNS.

℞ Salol..... 120 gr.
Cocain. hydroch.,..... 7½ "
Vaselin,..... 900 "
M. S. Apply externally.—CAPITAN.

BED-SORES.

℞ Zinc sulphat.,..... gr. xlv
Lead acetat.,..... dr. ss
Tinct. myrrh,..... m. xx.
Vaselin,..... q.s. ad. oz. ij
M. S. For external use.—FREY-

BERGER.

BLADDER IRRITABILITY AFTER DELIVERY.

℞ Salol.
Tr. hyoscyam.,..... āā dr. ij
Inf. buchu.,..... q.s. ad. f. oz. vi.
M. S. Teaspoonful three times a
day.—FOTHERGILL.

BRONCHIECTASIS.

℞ Terpinol,..... m. xxx
Olive oil, oz. iss
M. Div. in caps. No. 20. S. One
every two hours.—RABOW.

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[NO. 10

ORIGINAL PAPERS.

*ANTITOXIN IN THE LIGHT OF SCIENTIFIC INVESTIGATION.**

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THE incentive to write this paper—if, indeed, the general interest in the subject be not a sufficiently strong motive in itself—was furnished by a recently published paper entitled “The Failure (!) of Antitoxin in the Treatment of Diphtheria.” Were such a paper to appear in the pages of some obscure medical journal, no further attention would be paid to it. But, surprisingly, it was found ornamenting the tablets of one of our most valued medical weeklies, the *Medical Record*, and, what is still more surprising, it was read before a pathologic society in one of our principal and most enlightened cities. Such a paper, under such circumstances, cannot be allowed to pass unnoticed. The ideas expressed and the statements made therein must be submitted to a critical analysis in order that those who are open to conviction may be convinced. I shall first analyze the statements made by the author (Dr. Herman) and then point out the convincing arguments in favor of antitoxin.

Dr. Herman bases his conclusions entirely on clinical statistics. That statistics, when they are garbled to prove or disprove preconceived ideas, are of no value will hardly be gainsaid. The clinical experience with antitoxin covers a comparatively short period; and, considered by itself, might leave doubts as to its value. Moreover, antitoxin has never been universally employed, and it is possible to select scattered statistics here and there

* Read before the Cecil County (Md.), Medical Society, Oct. 12, 1890.

which would support an adverse verdict. But, since this is the only weapon with which this modern Don Quixote assails a scientific fact, I shall here show that, properly marshalled and interpreted, they tell a different story. Here are some statistics from the hospitals of Berlin which are no less convincing than those cited by Dr. Herman.

RECORD OF CASES OF DIPHTHERIA TREATED IN THE HOSPITALS OF BERLIN
FROM 1885 TO 1898.

	YEAR.	NUMBER OF CASES.	MORTALITY.	PER CENT.
Without Antitoxin.	1885	1,928	789	41
	1886	1,738	609	35
	1887	1,636	598	36
	1888	1,446	523	36
	1889	1,623	573	35
	1890	1,792	695	33
	1891	1,764	623	35
	1892	2,074	837	40
With Antitoxin.	1893	2,450	951	38
	1894	2,890	801	28
	1895	3,061	484	16
	1896	2,138	285	13
	1897	1,947	263	13

Here is an instance where the mortality from diphtheria ranged for a period of nine years between 33 and 41 per cent., with a remarkable constancy and regularity. In 1894 antitoxin enters upon the field, and the mortality, with about the same number of cases, is at once reduced to 28 per cent., and keeps on declining until, in 1896, a death-rate of 13 per cent. is reached. This, of course, is only a coincidence! So was the falling of the apple from the tree. It is also noteworthy that in 1885 there were treated 1,928 patients with a mortality of 41 per cent.; in 1892, 2,074 patients with a mortality of 40 per cent.; while in 1896 and 1897 the number of patients was 2,138 and 1,947 respectively, with a mortality of only 13 per cent. This certainly does not bear out the author's statement that with the advent of bacteriologic diagnosis "the applications to the hospital at once nearly doubled." Still, it may be claimed that the cases during the antitoxin years were very mild. The following comparative table, compiled by Gerloczy,¹ will in a measure show the strength of this argument:

¹ "Ueber den wert der Serumtherapie bei Diphtheritis," *Wien. klin. Rundsch.*, No. 21-24, 1896.

COMPARATIVE TABLE OF CASES TREATED IN THE ST. LADISLAUS HOSPITAL IN BUDAPEST. THE 401 CASES IN 1895 WERE TREATED WITH ANTITOXIN.

YEAR.		DIPHThERIA OF FAUCES AND NARES.		LARYNGEAL CROUP.		DIPHThERIA OF FAUCES AND LARYNG. CROUP		TOTAL.		
		NUMBER OF PATIENTS.	PER CENT. OF MORTALITY.	NUMBER OF CASES	PER CENT. MORTALITY.	NUMBER OF CASES.	PER CENT. MORTALITY.	NUMBER OF CASES.	PER CENT. MORTALITY.	
From 5 to 10 years of age.	{	1893	64	53.2	25	72.0	34	88.2	123	66.7
		1894	55	56.4	25	80.0	44	81.9	124	70.1
		1895	135	17.8	47	46.8	67	38.8	249	28.9
	{	1893	104	41.4	30	66.7	41	80.5	175	54.9
		1894	105	36.2	31	64.6	53	79.2	189	52.8
		1895	221	12.7	51	43.1	81	34.6	353	22.1
	{	1893	140	35.7	31	64.5	42	81.0	213	48.8
		1894	141	27.7	32	62.5	54	79.6	227	44.9
		1895	268	11.1	51	43.1	82	34.1	401	19.9

This table presents a comparison between short periods closely following each other. Age and location of disease are the same; sanitary conditions, etc., could also not have undergone any considerable changes; the hospital, physicians and probably the nurses are the same, and yet the mortality drops from 44.9 per cent. to 19.9 per cent. Similar results have been obtained by Church,² who treated 633 cases of diphtheria with antitoxin with a mortality of 19.5 per cent, as against 29.6 per cent. prior to the antitoxin period. The author also mentions the epidemic of 1897 in St. Petersburg, wondering how, despite the great mortality, "Baginsky, with assurance unwarranted even by his own experience, told an American physician that he had had no more dread of diphtheria since he had been using antitoxin than he would have had years ago of any simple ordinary constipation."

It gives me pleasure to introduce in this connection the evidence of Rauchfuss³ concerning the very same epidemic. Speaking of the gradual increase of diphtheria assuming threatening proportions since 1894, Rauchfuss says that while in 1897 the epidemic reached the climax of virulence (7,298 cases), it was not followed by the general depression manifest in 1881-1884, owing entirely to the general employment of antitoxin *which reduced the mortality fully one half*. (Mortality without antitoxin, 34.1 per cent.; with it, 14.6 per cent.) In the Children's Hospital of Prince Oldenburgski, antitoxin has been used systematically, beginning with the end of the year of 1894; the mortality during the four years (up to 1898) being 21.4 per cent. to 25.5 per cent. (average, 23.8 per cent.);

² "Clinical Value of Diphtheria Antitoxin," *Lancet*, June 4, 1898.

³ "The last epidemic in St. Petersburg and the employment of Anti-diphtheritic Serum in 1897," *Pract.*, Vol. XX., No. 16.

while prior to the employment of antitoxin the mortality was 56.9 per cent. During the antitoxin period diphtheritic croup also became less frequent.

	PREANTITOXIN PERIOD 1892-1894.		ANTITOXIN PERIOD 1895-1898.	
	FREQUENCY (PER CENT.).	MORTALITY (PER CENT.).	FREQUENCY (PER CENT.).	MORTALITY (PER CENT.).
Diphtheria of mouth with out croup.....	30.2	3.2	46.3	1.7
Phlegmonous diphtheria of the mouth.....	13.4	80.3	16.7	40.6
Diphtheritic croup.....	55.1	76.9	36.6	34.2
Diphtheria in other loca- tions.....	1.2	1.2	0.3	

These observations lead Rauchfuss to the conclusion that a critical analysis of the material gathered from the Children's Hospitals, as well as from private practice of country physicians, establishes beyond doubt the value of antitoxin, by the use of which the mortality was reduced one half. Dr. Dolinski, who was present at the time Rauchfuss read his report, expressed his belief that in antitoxin we possess not only a curative but also a prophylactic measure as well. Several other Russian physicians of wide experience, especially in country practice, have expressed themselves favorably with regard to antitoxin; and since the author allows himself to point out as arguments statements made by individual physicians, quoting one or two individual cases, I may also mention that among the many American physicians who are using antitoxin I have met a practitioner whose ability and wide experience have won for him one of the foremost places in the ranks of our profession, and who is just as enthusiastic over antitoxin as Baginski. Indeed, this physician told me that while he had had a considerable mortality prior to the introduction of this new remedy, he had had none since. Kossel believes that "it is possible to cure every fresh case of true diphtheria by timely injections of a sufficient quantity of antitoxin"; while the well-known statement of Behring that "of each one hundred patients who received the ordinary dose of antitoxin during the first forty-eight hours not even five would die of diphtheria," shows what the true scientists think of antitoxin. I could easily multiply these favorable testimonies and extend statistics almost *ad infinitum*, were I not of the opinion that these data, important as they may seem, are of secondary value in vindicating this new life-saving remedy against attacks. There is sufficient scientific evidence to support the claims of those who are in favor of antitoxin, and to that I shall refer later.

It is asserted that the decrease of the mortality of diphtheria is brought about solely by sanitary improvements, and the still greater decrease of the mortality of typhoid is cited as an illustration. Similar statements are made by the antivaccinationists. This is certainly true of typhoid fever, which is mainly a water-bred disease, and owes its spread to defective sanitation. With the improvements in the water supply of the cities and house drainage the disease has decreased both in frequency and virulence, and the time, I hope, is not far distant when typhoid fever, like the black plague, will be of historical interest only. This can hardly be said of diphtheria. The sanitary conditions necessary for the extinction of this disease are far from having yet been realized. Any one practicing in a large city—and the writer of the paper under consideration is one of them—knows only too well that our present century cannot boast of any extraordinary amelioration of the sanitary conditions of our working class. Our slums are, if anything, expanding their territory to a frightful extent. In face of such evidence as is afforded by the life of our poor in large cities, to claim that diphtheria is decreasing markedly owing to sanitary improvements is as ridiculous as it is untrue.

"A second factor in limiting the spread of the disease (diphtheria)," says Aust,⁴ "is the antitoxin. . . . It is hardly possible to doubt at present that the discovery of diphtheria antitoxin forms a most advanced step in the treatment of diphtheria. . . . It must be admitted that a measure which possesses the virtue of curing a disease in a shorter time also, by this alone removes the conditions favorable for the spread of that disease. . . . The time is not far distant when the failure to employ antitoxin in diphtheria, even as a prophylactic, will be considered a professional blunder." Another factor of equal, if not greater, importance is the police regulations with reference to quarantine; the latter, however, can be successfully carried out only with the aid of a bacteriologic diagnosis. But here the author makes the startling announcement that "the diagnostic value of the Klebs-Löffler bacillus has not been indisputably established."

The work of Löffler, Ehrlich, Roux, Yersin, Behring and a score of other able bacteriologists who have succeeded in demonstrating this fact is wiped out by a single stroke of the pen. I shall dismiss this claim with the following statement made by Muir and Ritchie:⁵ "The bacillus of Löffler has now been conclusively proved to be the cause of the disease, and its discovery in the false membrane is practically universally regarded as the only certain means of diagnosis. With the exception of the tubercle bacillus, there is probably no organism which has been the subject of so much routine examination, and the opinion of all *who are competent to judge* may be said to be unanimous on this subject."

⁴ "Entstehung und Verbreitung der Diphtherie nebst Sanitätspoli-zellichen Maasregeln zur Verhütung derselben," *Deutsch. Vierteljahrsschr. f. Öffentl. Gesundheitspfl.* 2 H., 1899.

⁵ "Manual of Bacteriology," p. 381.

To prove that the presence of diphtheria bacilli is not an "infallible indication that diphtheria exists," the author quotes a certain Allen, who, while treating a case of diphtheria, submitted the swabbings from the throats of the other members of the household for bacteriologic examination, and much to his disgust (!) the reports were positive, the people remaining healthy. That true diphtheria bacilli are found in the throats of healthy individuals does not argue either against the specific nature of that micro-organism or the value of bacteriologic examination. It is a well established fact that specific micro-organisms may be present within the body of an immune individual without producing disease. This is true of yellow fever, typhoid fever, pneumonia, tuberculosis and probably all infectious diseases, diphtheria not being an exception. According to Park, an examination of the throats of 330 healthy persons revealed the presence of virulent diphtheria bacilli in eight, two of whom subsequently developed diphtheria. But, at the same time, it must be remembered in the first place that the immunity of the individual may at any time be interrupted by an intercurrent disease or any other conditions which establish a *locus minoris resistencie*, and the "innocent micro-organism may in that case become virulent; and, again, that healthy individuals fostering harmless, to them, pathogenic bacteria may be, and undoubtedly are, carriers of infection. In the case of diphtheria this has been demonstrated in many instances.⁶ This being the case, it only serves to further prove the value of a bacteriologic diagnosis by means of which we are enabled not only to administer prophylaxis (antitoxin) to those who are in danger of becoming sick; but, what is of greater importance, to isolate them and thus prevent the conveyance of the infection to others. Moreover, in drawing conclusions from the reports of those cases in which diphtheria bacilli were found in the throats of healthy individuals, we must not forget that in many instances it might have been the pseudo-diphtheria bacillus which was discovered. The two are almost identical in morphologic and even cultural characteristics, and it is only after a great deal of care that they can be differentiated. That such a mistaken diagnosis has been made in many cases is very likely, but this, again, is not the fault of the bacteriologic diagnosis but the bacteriologist, who either relied too much on morphology or was doing his work carelessly and superficially. Glücksmann examined on three occasions the secretions from the throats of healthy children, with the result that on the first occasion pseudo-diphtheria bacilli were found in seven cases out of thirteen, on the second in nine out of fifteen and on the third in four out of eleven.

Another grave charge made against the bacteriologic diagnosis is that through its instrumentality every case of sore throat is included among the diphtheria cases while in ye olden times only genuine diphtheria,

⁶ Foulerton and Llewellyn: "On the Conveyance of Diphtheria Infection by Apparently Healthy Individuals," *Lancet*, October 23, 1897.

diagnosed clinically, was reported. A careful analysis of the facts shows this not to be the case, as the following table on the correspondence of the clinical and bacteriologic diagnosis of diphtheria shows:

CLINICAL DIAGNOSIS.	FROM CHILDREN'S HOSPITALS.			FROM OTHER HOSPITALS AND PHYSICIANS.		
	NUMBER OF CASES.	DIPHTHERIA BACILLI PRESENT.	PER CENT.	NUMBER OF CASES.	DIPHTHERIA BACILLI PRESENT.	PER CENT.
Diphtheria.....	74	71	96	511	353	70
Diphtheria (?).....	2	1		65	25	33.8
Sore throat.....	8	—		111	14	12
Croup.....	9	8	90	21	14	66.8
Pseudocroup.....	17	—		5	2	
Diphtherit. Conjunctivitis.	2	2		2	2	
Healthy.....	40	4				

CASES FROM PRIVATE PRACTICE. PATIENTS OVER TWENTY YEARS OF AGE.

CLINICAL DIAGNOSIS.	NUMBER OF CASES.	DIPHTHERIA BACILLI PRESENT	PER CENT.
Diphtheria.....	69	20	29
Sore throat.....	21	2	

Thus, of 511 cases clinically diagnosed as diphtheria the adepts of the bacteriologic diagnosis would include only 353 or 70 per cent.; of 69 in the second table only 20 or 29 per cent.; of 21 cases of croup only 14 or 66.8 per cent.; while of 111 cases of sore throat 14 or 12 per cent. and of 21 cases in the second table only 2. Of 5,611 cases of suspected diphtheria Park⁷ found true diphtheria bacilli only in 58 per cent. In 119 cases diagnosed by the physicians as true diphtheria Matson⁸ failed to find the Klebs-Löffler bacilli. From statistics collected by various authors, both in this country and abroad, it is seen that from 20 to 50 per cent. of the cases diagnosed as diphtheria and sent to hospitals are not cases of true diphtheria, the mortality in these cases being about 1.7 per cent. (Park). These facts prove conclusively that while many cases of so-called "sore throat" were found by the bacteriologist to be diphtheritic, a far greater proportion of cases of what was diagnosed as diphtheria was not found to be due to the diphtheria bacillus, and it is therefore these latter cases which under the old way of depending on the clinical symptoms alone

⁷ "Report on Bacteriologic Investigations and Diagnosis of Diphtheria," *Scient. Bull.*, No. 1, of the New York Health Department.

⁸ "Annual Report of the Bureau of Health of Pittsburgh," 1896.

were included in the statistics of diphtheria. When we remember how prone a physician is to make a diagnosis of a grave disease rather than a mild affection, to keep on the safe side, especially in cases of an epidemic, we can readily see how much more reliable are the statistics based on a bacteriologic examination. There is not a single pathognomonic sign of diphtheria save the appearance of the membrane. The constitutional disturbances accompanying diphtheria may occur in any severe inflammation of the throat, and besides they are so varied that no fixed clinical picture could be drawn, even by such a keen observer as the late A. Flint. He says:⁹ "False statistics in regard to death-rate, and erroneous conclusions respecting the effect of treatment, can be avoided only by recognizing as an essential criterion the local diphtheritic characteristics. Adopting this rule, the diagnosis cannot be positive prior to the membranous exudation, which may be preceded for a variable period by pyrexia and other general symptoms."

This single "pathognomonic" sign is also of little diagnostic value. Pathologically, a diphtheritic membrane has no specific significance, representing, as it does, simply a form of inflammatory necrosis which may be due to a great many causes, such as corrosive poisons and other inflammatory processes. Thus it has been well established that streptococci may produce a pseudo-membrane. Blumer¹¹ reports three cases of membranous angina simulating diphtheria which occurred in the Johns Hopkins Hospital. The predominating micro-organism in the first case was a bacillus identical with bacillus pyocyaneus, and in the second and third an almost pure culture of streptococcus pyogenes was obtained. There is no doubt that these micro-organisms were responsible for the appearance of the membrane. On the other hand, the same author reports two cases of diphtheria without a membrane, one of them simulating follicular tonsillitis. Matson (l. c.) reports a fatal case of diphtheria in which the only symptoms present were those of follicular tonsillitis, no pseudo-membrane having been observed. Within a few hours of the patient's death a swab was inoculated from one of the tonsils and from this a pure culture of diphtheria bacilli was obtained. And yet, in spite of these patent facts, there are physicians who still assert that they are able to make a diagnosis of diphtheria without a bacteriologic examination, and that *their* statistics are the more accurate! I shall not even attempt to refute the following extraordinary statements: "Back of the formation of the false membrane is that deranged condition of the system permitting the growth of pernicious bacteria (?), which abnormal state is really the disease. We do not know but what the forma-

⁹ "Some physicians are accustomed during an epidemic to consider cases of simple or follicular pharyngitis as cases of diphtheria."—"A Treatise on the Principles and Practice of Medicine," by Austin Flint. Sixth edition.

¹⁰ *Ibid.*

¹¹ Notes on some cases of angina treated with Behring's Antitoxin, *Johns Hopkins Hosp. Bull.*, November-December, 1895.

tion of the false membrane is nature's method of protecting the patient; and until it *shuts off the air from the lungs* (!) the membrane may serve some useful purpose." The absurdity of these statements is self-evident. I shall only remark that when the membrane does "shut off the air from the lungs," as in diphtheritic laryngitis, it usually serves the useful purpose of relieving the patient from terrestrial cares. The pseudo-membrane being an exudate is simply a response of the tissue to a local irritant, in this case the diphtheria bacilli. Membrane or no membrane the bacilli, while localized, produce a poison (toxin) which is absorbed and poisons the organism. Most of the diphtheria bacilli, as well as the streptococci, are in the pseudo-membrane, and the advisability of its early removal, either by means of antitoxin or local application, is apparent.

Some grave charges against antitoxin made by the same author must, however, be discussed at some length. They, again, have a semblance of truth which may be misleading. These are: (1) Antitoxin has produced death; (2) it causes paralysis of the heart and other portions of the body; (3) it acts injuriously on the kidneys, skin and joints; (4) it causes septic pneumonia and other complications. When it is remembered that the diphtheria infection produces parenchymatous degeneration of heart muscles and kidneys, is often followed by post-diphtheritic paralysis, and not infrequently complicated by diseases of the respiratory passages, it may well be questioned whether these complications can be attributed to the antitoxin. The increased frequency of these complications, if this be the case, may well be explained by the fact that antitoxin cures many grave cases, the very same which are likely to suffer from the complications named, as was justly pointed out by Dana.¹²

Assar¹³ treated 352 cases with antitoxin with a mortality, excluding 140 light cases, of 9.9 per cent. He found that the frequency of albuminuria and grave forms of nephritis decreased (63 per cent. prior and 54.8 per cent. during the antitoxin treatment). Dieudonne,¹⁴ summing up the reports of 9,581 cases treated with antitoxin (mortality 15.5 per cent.), concludes that no bad effects on the kidneys have been observed. Albuminuria occurred in 28.5 per cent. of the cases, but in 17.6 per cent. it already existed prior to the injection. In the report of medical superintendents of the hospitals of the Board in London we find a review of 2,182 cases treated with antitoxin. No bad effects of the serum on the kidneys were manifested. In the report of the American Pediatric Society¹⁵ 5,794 cases treated with antitoxin are recorded. The mortality was only 12.3 per cent.; and if those who died during the first twenty-four hours were excluded, the per cent.

¹² "Diphtheritic Palsies and the Use of Antitoxin," *Med. Record*, April, 1896.

¹³ "Erfahrungen ueber die Wirkung des Heilserums in der Behandlung der Diphtherie," *Allg. mediz. Centralzeit.*, No. 16-18, 1896.

¹⁴ "Ergebnisse der Sammelforschung ueber das Diphtherieheilserum fur die zeit vom April, 1895 bis Marz, 1896, *Arbeit aus dem Kaiserl. gesundheitsamte*, Bd. XIII., H. 2.

¹⁵ *Med. Record*, July, 1896.

would fall to 8.8. Bronchopneumonia was observed in 5.9 per cent. In two to three cases a bad effect on the heart was noticed; but, on the other hand, in a great many cases the heart's action was considerably improved. The occurrence of nephritis which could be ascribed to the antitoxin was observed in one single case. Post-diphtheritic paralysis occurred in 9.7 per cent. of the cases.

Dana (l. c.) is of the opinion that post-diphtheritic paralysis is not of any greater frequency after the introduction of antitoxin. In the report of the medical superintendents of the Metropolitan Asylum Board of London we find a very favorable comment on antitoxin. No harmful effects have been observed. Fürth¹⁶ finds no untoward effects produced on the kidneys by the serum. An exanthem occurred in six cases, but when the quantities of serum injected could be decreased on account of the increased potency, this complication also disappeared. This last observation is very important, showing that the skin eruption and the affection of the joints are due entirely to the blood-serum. It is noteworthy that most of the reports of these complications are found in earlier literature, when the antitoxin was weak and large doses of serum were required to produce the desired effect; but as the strength of the serum increases and the amount injected is proportionally diminished, the unfavorable reports become less and less frequent. While it has been demonstrated by Uhlenhuth¹⁷ that the horse's serum is not seriously poisonous, it is nevertheless sufficiently toxic to produce undesirable effects on the skin and joints. But since there is every reason to believe that the time is coming when we shall be in possession of an antitoxin either highly concentrated or in the form of a soluble powder, this bugbear will also vanish.

As to the fatal cases attributed to antitoxin, there have been a few reported; and, even admitting that the antitoxin was the direct cause, we can still explain them by certain idiosyncrasies which are not infrequently manifested in the case of other drugs. Therapeutic doses of strychnin, morphin, etc., have been known to produce death occasionally. A certain physician told me that a patient of his, suffering from pneumonia, had received only one-twentieth of a grain of strychnin three times daily, when marked physiologic effects were noticed in a few days. The drug was discontinued and resumed after the lapse of a few days, the dose having been diminished to one-thirtieth of a grain. After twenty-four hours the patient died of typical strychnin poisoning. Every physician has seen similar cases in which a peculiar idiosyncrasy was manifested, and yet they do not condemn the drugs which have caused death in these particular instances. Again, it is not at all unlikely that in these fatalities due to antitoxin the

¹⁶ Ueber weitere 150 mit Behring'schem Heilserum in der medicin. u. chirurgisch. Klinik zu Freiburg i. B. behandelte Diphtheriefälle, *Munch. med. Wochenschr.*, No. 29, 1896. 2. Zur Kenntniss der giftigen Eigenschaften des Blutserums, *Zeitschr. f. Hyg. u. Infektionsk.*, 1897.

¹⁷ "Zur Kenntniss der giftigen Eigenschaften des Blutserums," *Zeitschr. f. Hyg. u. Infektionsk.*, 1897.

latter was in some way contaminated. At all events, we may consider these cases as pure accidents.

In view of the fact that figures can so easily be made to lie and that statistics can unfortunately be so arranged as to disprove the value of antitoxin, we must turn now to the more precise and scientific data obtained from laboratory experiments. The laboratory of late is the cradle in which many a scientific fact bearing on medicine is reared by the tender hands of the laboratory worker. It is in the laboratory that the pathogenic micro-organisms were first discovered and described; it is in the laboratory that Widal's agglutinating reaction was first observed, and it is there that Roentgen rays were first made to penetrate opaque objects. For the clinician it remains to make practical application of all these facts, and this can only be successfully accomplished when the latter are understood and appreciated.

Turning, then, to the laboratory for evidences in favor of antitoxin, we find them overwhelming. In the first place, diphtheria antitoxin is not a single phenomenon but a link in the chain of serum-therapy, which means, in other words, the production of artificial immunity. The antitetanic and antistreptococcic serums, small-pox and anthrax vaccination, etc., are all links in the same chain, and every one of these has saved, or is destined to save, many a human life. The production of artificial immunity is an endeavor to imitate the natural immunity by which nature guards the organism against disease. Numerous attempts have been made to explain these two forms of immunity and establish their correlation. It is claimed by some that the two are identical, and that natural immunity can be transferred from one organism to another. Parker,¹⁸ on the one hand, endeavored to establish the immunizing properties of non-immunized serum, while MacFarland¹⁹ in his excellent paper, on the other hand, refuted the extravagant claims made by Parker; and a careful analysis of the facts cannot but lead us to the conclusion at which Behring²⁰ arrived, namely, that "the blood of animals which have acquired a natural immunity does not possess either immunizing or healing properties." The two are alike, but not identical. In the case of natural immunity the cells have been changed in their composition so that they cannot enter into combination with the toxins, while in artificial immunity the cells produce a soluble antitoxin which serves to neutralize the toxins and thus render them harmless. Such a natural immunity is possessed by the cells of our body against certain deleterious products of our own metabolism.

The stimulation of the cells to produce a protective antitoxin can be accomplished by means of any toxic substance, be it the product of bacterial life or a chemical poison. Ehrlich succeeded in immunizing white mice to

¹⁸ INTERNATIONAL MEDICAL MAGAZINE, 1899.

¹⁹ INTERNATIONAL MEDICAL MAGAZINE, September, 1899.

²⁰ "Die Blutserumtherapie bei Diphtherie und Tetanus," *Zeitschr. f. Hyg. u. Infektionsk.*, Bd. XII., 1892.

ricin, and, moreover, their blood conferred the same immunity upon other susceptible animals. Similar results have been obtained with other chemical substances by Woolridge, Buchner, Brieger, Kitasato, Wasserman and others. A certain degree of immunity against diphtheria was obtained by Behring and Wernicke by the injection of peroxid of hydrogen, iodintrichlorid and chlorid of gold and sodium. Dieudonne²¹ succeeded in checking anthrax in dogs by intravenous and intraperitoneal injections of sodium cinnamate. These facts are understood when we remember that the bacterial toxins are also only chemical substances possessing a definite chemical composition. The toxins of diphtheria can be dried and preserved in the form of whitish-yellow powder. They change their properties in various media, and while they lose their virulence in the presence of an organic acid, they regain it when the medium is again rendered alkaline (Roux and Yersin). They can be precipitated by alcohol or calcium phosphate. The same is true of antitoxin, which is also a chemical product of the cells. "One molecule of toxin," says Ehrlich,²² "combines with a definite and constant quantity of antitoxin." Here, then, we have practically a chemical poison and an antidote, the latter acting upon the former with as much certainty as any other antidote in our materia medica acts upon its respective poison. Animals can be killed with a certain quantity of diphtheria toxin or saved by a proportionate quantity of antitoxin. According to Cobbett and Kanthack,²³ 0.15 c.c. of toxin, when injected into a guinea pig weighing 270 grams, will be neutralized by 0.1 or one antitoxin unit of antitoxin, but when 0.3 c.c. of toxin and 0.1 c.c. of an antitoxin unit are used, a slight infiltration will result; when only 0.088 of a unit are employed considerable infiltration and necrosis will follow and if a still smaller quantity of antitoxin is administered death follows on the third day. The following table from Park²⁴ illustrates the relations between toxin and antitoxin:

WEIGHT OF GUINEA PIG IN GMS.	AMOUNT OF TOXIC BOU- LON IN CC.	AMOUNT OF SERUM IN CC.	RESULT IN ANIMAL.		
			WEIGHT ON 5TH DAY.	AMOUNT OF IN- DURATION ON 5TH DAY.	GENERAL CONDITION ON 5TH DAY IF ALIVE.
260	2.00	.0012	265	None.	Good.
257	2.10	.0012	242	Slight.	Good.
250	2.16	.0012	237	Considerable.	Good.
252	2.20	.0012	215	Considerable.	Sick.
265	2.36	.0012	225	Considerable.	Dying.
252	2.38	.0012	Marked.	Dead on 5th day.
250	2.40	.0012	Dead on 3d day.

²¹ "Schutzimpfung und Serumtherapie," p. 85.

²² "Die Wertbemessung des Diphtherieheilserums und deren theoretische Grundlagen," *Klinisch-Jahrbuch.*, B. VI.

²³ *Centralbl. f. Bacter., Parasitenkun. u. Infektionsk.*, Bd. XXIV., No. 4.

²⁴ "The Relation of the Toxicity of Diphtheria Toxin to its Neutralizing Value upon Antitoxin at Different Stages in the Growth of Culture," *Jour. of Experim. Med.* Vol. III., Nos. 4 and 5.

It is thus seen that even slight oscillations in the quantities of either toxin or antitoxin will change the results, and these are brought about with such a constancy that they can almost be predicted.

It may be claimed by the doubting Thomas that the diphtheria toxin acts on animals and man differently and therefore we cannot draw conclusions from results obtained with the former. The scientific evidences which prove that the effects of the toxin on both are similar are too numerous to be embodied in this paper. I shall only point out briefly the effects produced on man and susceptible animals:

EFFECTS OF DIPHTHERIA BACILLI

ON MAN.

Elevation of t° and all other phenomena accompanying pyrexia.
Pseudo-membrane at the seat of infection.

Degenerative changes in the kidneys, heart and voluntary muscles. Congestion of internal organs.
Albuminuria.
Post-diphtheritic paralysis.
If fatal, death by asthenia.
Bacilli found at the seat of infection, very rarely in the internal organs.

ON SUSCEPTIBLE ANIMALS.

Elevation of t° and all other phenomena accompanying pyrexia.
Infiltration and necrosis at the seat of inoculation. Pseudo-membrane on mucous surfaces when previously injured.
Degenerative changes in the kidneys, heart and voluntary muscles. Congestion of internal organs.
Albuminuria.
Post-diphtheritic paralysis.
If fatal, death by asthenia.
Bacilli found at the seat of infection, very rarely in the internal organs.

"If antitoxin is a specific," argues Dr. Herman, "why does it not cure all cases?" The reason is not far to seek: (1) It is not used early enough, time being given for the streptococci to develop and produce their virulent effects. Hilbert²⁵ found that when a mixed culture of diphtheria bacilli and streptococci is inoculated into animals afterwards treated with antitoxin, the latter recover from the diphtheria but succumb to the streptococcus infection. But when the antitoxin is used early, the streptococcus infection is averted. (2) It is not used energetically enough, too small quantities or at too rare intervals being administered. (3) There is a proportion of patients who are so susceptible to the disease that antitoxin cannot cure them, just as there are patients suffering from malaria who cannot be cured by quinin, or syphilitics who are not cured by mercurials and iodids.

²⁵ "Ueber Wesen und Bedeutung der Mischinfektion bei Diphtherie und ihr verhältnis zur Heilserumtherapie." *Deutsch. Arch. f. klin. Med.*, Bd. LIX., 1897, p. 248.

HERPES ZOSTER, WITH ESPECIAL REFERENCE TO THE SUPRA-ORBITAL TYPE.

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EVERY physician is from time to time consulted by patients suffering from acute neuralgia. Ordinarily, this functional disorder yields to simple

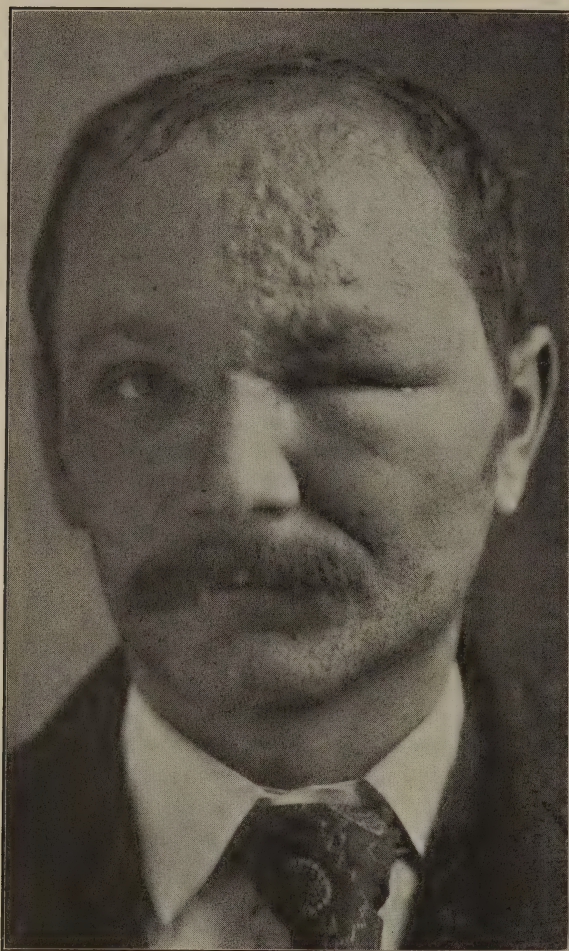


FIG. 1.

treatment, and the favorable prognosis usually given is sustained. Not infrequently, however, the neuralgic pain is the expression of an undeveloped herpes zoster, and the pain is soon followed by an outbreak of vesicles in the affected region. It is always a source of annoyance to have one's prognosis proved false, particularly when there develops an unpropheied and rather formidable looking eruption. Patients under such circumstances are prone to apply the "post hoc," and conclude that the sudden outbreak of an eruption following immediately upon the administration

of a drug bears the relation of effect to cause. The point to be remembered is that in the presence of a severe and persistent neuralgia occurring over an area frequently the seat of herpes zoster, such as the supra-orbital and inter-

costal regions, the possibility of a prodromal zosteric pain is to be borne in mind and the prognosis guarded thereby. There is much difference of opinion among authorities as to the etiology of herpes zoster. The preponderating frequency of this affection in the spring and autumn, with an occasional apparent epidemicity, have led many to regard the disease as of infectious origin. Exposure to cold appears to be responsible for some cases.

The pathology of the disease is no longer a matter of contention. In the case of intercostal zoster, the lesion exists either in the peripheral nerves or the ganglia upon the posterior root of the spinal cord. In trifacial herpes zoster—and it may here be remarked that this is the only cranial nerve affected—the Gasserian ganglion is the seat of the pathologic change. Any cause capable of giving rise to a neuritis or a ganglionitis may produce a herpes zoster.

In a typical attack of herpes zoster, there occurs, after prodromal neuralgic pain, an outbreak of deep-seated vesicles with the characteristic ar-



FIG. 2.

range in clusters. The lesions are seated upon an inflammatory base and there is often much swelling. The distribution is striking, and gives an immediate clue to the diagnosis. The eruption follows more or less closely the line of a nerve trunk and its cutaneous branches. Furthermore, the eruption is almost invariably limited to one side of the body: Bilateral cases of zoster are of extreme rarity. Occurring in the supra-orbital region, the eruption is sharply limited by a line extending from the root of the nose to the sagittal suture. A few lesions are apt to develop just beyond

the median line. This condition is well represented in the accompanying photograph.

The disease runs a more or less definite course, lasting from ten days in mild cases to three or four weeks, and ending in spontaneous recovery.



FIG. 3.

The pain is variable in intensity, sometimes mild, at other times so intense as to render sleep impossible. Children suffer very much less than adults. The pain precedes the eruption, accompanies it, and not infrequently persists after its disappearance. Indeed, weeks and months may elapse before its entire subsidence.

Supra-orbital herpes zoster differs somewhat in its symptomatology from

zoster affecting other regions. The eyelids always participate in the general swelling and not infrequently the eyeball itself is compromised. There is usually swelling of the bulbar and palpebral conjunctivae and frequently herpetic vesicles upon the conjunctiva and cornea. In severe cases corneal ulceration and iritis develop, terminating at times in a general panophthalmitis and total destruction of vision. In supra-orbital zoster there is greater liability of a continuation of the neuralgic pain than in the other forms. Fig. 2 represents a patient with a severe supra-orbital zoster with marked vesiculation and an unusual amount of crusting. The bulbar conjunctiva presented much chemosis and one or two vesicles. Both the conjunctiva and the affected skin remained for a time afterwards anesthetic. The patient suffered severe pain both during and after the attack. This was entirely relieved by the application of the faradic current.

Again, as a result of the marked trophic disturbance, necrosis of the affected areas may take place. This leads to the formation of ulcers which leave indelible scars. Fig. 3 is a well-marked example of ulceration from trophic skin necrosis.

The treatment of herpes zoster has for its object the relief of pain and the protection of the affected skin areas from mechanical injury and infection. For the relief of the distressing neuritic pain one may employ the coal tar anodynes, such as antipyrin, phenacetin, etc., either alone or in conjunction with bromids. When the pain is severe, however, it will be found necessary to resort to the use of morphin. A therapeutic measure of great value, both for the mitigation of the pain during and after the attack, is the electric current, preferably the galvanic. This should be applied in weak current once or twice a day over the affected areas.

Locally, dusting powders, lotions, ointments and paints are used. Colodion may be advantageously painted over the patches when they are conveniently situated and not too extensive. In mild cases it will suffice to use an antiseptic dusting powder, containing, if desired, a few grains of opium, and cover the area with absorbent cotton and a bandage.

When the cornea is involved, the patient should receive skillful ophthalmological treatment.

The Pineal Gland and Sexual Development. Dr. Heubner, of Berlin, had the following interesting case: A boy, $4\frac{1}{2}$ years old, presented the development of a boy of 8 or 9 years, as well as an abnormally large penis, well-developed scrotum and testis, the pubes being covered with hair. The boy suffered in infancy from spasms of the larynx, his speech developing slowly. Up to $7\frac{1}{2}$ months the development was normal, the abnormal growth having taken place within one year after that period. He finally developed hydrocephalus, and, by means of the X-Rays, a tumor was located in the neighborhood of the hypophysis cerebri. The boy died, and an autopsy revealed a tumor of the pineal gland.

*HIGH AMPUTATION OF THE CERVIX AND VAGINAL SUTURE
AS A PRELIMINARY TO ABDOMINAL HYSTERECTOMY,
WITH THE REPORT OF A CASE.*

BY W. WAYNE BABCOCK, M.D.,

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for Women.

THE supra-vaginal method of abdominal hysterectomy from its convenience and safety seems at present to be the preferable method of removing the uterus in most cases where there is no malignant or infectious disease. The smaller number of cases in which it is desirable to open the abdomen for the performance of total hysterectomy is usually operated upon by one of two methods. Either the uterus is removed entirely through the abdominal incision, curettage and cauterization being at times included in the preliminary preparations for vaginal asepsis; or, the broad ligaments having been ligated and divided by a coeliotomy, the abdominal incision is closed and the uterine removal completed through the vaginal vault. The subjoined case has suggested the occasional usefulness of a somewhat modified reversal of this latter procedure.

The patient was a fleshy married woman, forty-seven years of age, and with a cancerous family history. Since the age of fourteen, she has suffered from occasional attacks of pain in the right hypochondriac region, that are associated with nausea, vomiting, and, at times, jaundice. For ten years a sense of discomfort has been frequently present in the lower abdomen and pelvis, and during the past two years this has developed into attacks of severe, dull, dragging pain that last two weeks, and occur immediately before or during the menstrual period. Within the past few months a procidentia has been noticed. Menstruation is not painful, has continued regular as to time, and has not been excessive in quantity.

An examination, with the patient recumbent, showed a narrow, elongated cervix protruding at the introitus vaginae. Above the cervix was continuous with a firm, resistant and globular tumor of about the size of a fetal head that occupied the pelvis and lower abdomen. No disease of the uterine adnexa could be made out. The family tendency to malignant disease, and the patient's urgent desire to be assured, as far as possible, against future malignant disease, made it seem desirable to extirpate the entire uterus as well as the fibroid tumor. This conclusion was strengthened by the fact that the cervix was elongated and in its prolapsed condition had been exposed for a considerable period to a greater or less degree of irritation, and by the experience of those operators who have noted an epitheliomatous development in the cervix left after a supra-vaginal hysterectomy.

The low-lying position of the tumor, with the attendant difficulties of satisfactory vaginal division, hemostasis, and suture through the thick abdominal walls, made it seem undesirable to do a purely abdominal hysterectomy. On the other hand, a purely vaginal hysterectomy or a hysterectomy by the usual combined method was rendered inexpedient by the size of the tumor.

The following method was therefore adopted April 11, 1899. The patient having been etherized and the field of vaginal operation aseptized, the cervix was pulled down by a pair of tenaculum forceps and was encircled by an incision to the depth of the cellular plane. With continued traction upon the cervix, the adjacent tissues were carefully pushed off until the uterine vessels were exposed. These vessels were ligated with catgut and the cervix amputated at a high level. A provisional mattress suture of heavy silk was immediately introduced in the amputated face of the cervix in a manner to occlude both the oozing vessels and the divided cervical canal. Mattress sutures of catgut were then introduced to completely close the incision in the vaginal vault. Before these sutures were tied the cavity above the vagina was thoroughly irrigated and firmly packed with iodoform gauze. This packing served not only to limit any remaining oozing, but also tended to elevate the tumor in the pelvis, to push the ureters, bladder and rectum from its lower portion, and to serve as a guide at a later stage of the operation. The sutures in the vagina having been tied, a supporting tampon of gauze was introduced into the vagina, the peritoneal cavity as yet not having been opened.

The second part of the operation was now begun by the conventional median incision through the abdominal walls. After liberating a few adhesions between the intestine and tumor, the ovarian and round ligament vessels were ligated on each side and the upper part of the broad ligaments divided. Connecting the broad ligament incisions by an incision across the face of the tumor, the bladder and broad ligaments were stripped down. Some hemorrhage occurred during the division from the left uterine artery and both uterine arteries were retied individually with fine silk. Guided by the gauze packing, the remaining structures were divided and the tumor (a globular fibromyoma with central necrosis), uterus, ovaries and gauze removed, the procedure being greatly facilitated by the fact that it was not necessary to interfere with the vaginal vault.

After suturing in turn the pelvic cellular tissues and the peritoneum over the vaginal stump with continuous sutures of fine catgut, the gall bladder was palpated for calculi and the abdominal incision closed, in layers, by buried sutures of chromicised and plain cumulated catgut. The convalescence was a febrile and associated with surprisingly little pain.

The procedure, in outline, consists of a preliminary high cervical amputation with the ligation of the uterine arteries, the constriction or coapta-

tion of the face of the cervical stump and cervical canal, and the approximation of the vaginal wound by sutures after the introduction of a packing of gauze or other material above the vagina. The peritoneum is not opened from below. The removal of the uterus through the abdomen is facilitated by: (1) The preliminary control of the uterine and vaginal vessels, permitting the complete arrest of the uterine circulation by ligature placed in the upper part of both broad ligaments. (2) The guide and support afforded by the gauze packing below the stump of the cervix, that also, by pressing aside the ureters, bladder, etc., limits the danger of wounding these important structures. (3) The previous closure of the vagina, which not only renders it unnecessary to either incise or suture this organ through the abdominal incision, but also tends to limit the danger of peritoneal infection from this source.

Of course for the many cases of abdominal hysterectomy where there is no indication for the removal of the cervix, the method by supra-vaginal amputation is far preferable; while in many cases of uterine tumor in which the cervix is largely effaced or is displaced upwards or backwards, the procedure is hardly applicable. But in certain cases of large uteri, with benign or malignant tumors that are situated low in the pelvis, where there is an indication for the removal of the cervix the preliminary vaginal operation may diminish the chances of sepsis, facilitate the intra-abdominal work, afford a better technique and perhaps insure a better convalescence than the usual abdominal or combined pan-hysterectomy.

The indications for the removal of the cervix during a hysterectomy include: (1) All cases of malignant disease, or of tuberculosis of the uterus; (2) certain cases in which there is laceration, hyperplasia or inflammation of the cervix not to be relieved except by an extensive trachelorrhaphy or amputation; (3) certain cases in which the retention of the cervix is believed to predispose distinctly to a future malignant involvement. Of course there are cases of extensive malignant or infectious disease where the suture of the vagina may be unwise; but even here a temporary suture, to be removed and replaced by a drain after the abdominal closure, may prove of service.

1833 Chestnut Street.

THE USE OF CALOMEL IN DIPHTHERIA.¹

BY T. D. COLEMAN, M.D.,

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My experience for the past nine years with the use of calomel in the treatment of diphtheria corroborates so perfectly the position taken by my friend, Dr. Judd, in his admirable paper, that I am very glad to have the

¹ Remarks made during the discussion of Dr. L. D. Judd's paper of this title before the American Climatological Association, at its meeting in New York, in June, 1899.

opportunity of adding my testimony to what he has said. My father, Dr. John S. Coleman, toward the latter years of his life, used the mercury treatment for diphtheria with such signal success that I could not fail to see the virtue of it.

In a paper which appeared in the *Journal of the American Medical Association* of February 23, 1899, he records some experiences in the use of bichlorid of mercury in this disorder. In one case he gave a child sixteen months old nine grains of bichlorid in three days, with the result that at the end of that time the child expelled a membrane containing the impression of six tracheal rings—complete recovery following.

Latterly he gave up the use of bichlorid for the subchlorid or calomel, for the reason that the bichlorid tended to irritate the stomach. In one case which I now recall he gave the five-year-old son of a physician 360 grains of calomel in three days, complete recovery following. The boy is now a robust lad of fifteen years. In all his experience with mercury in the treatment of diphtheria, he lost only one case, and this case he was called to only after other remedies had failed, and only twelve hours before the child died.

My own experience in the treatment of the disease has been similar and equally gratifying. In an experience extending over nine years I have only one death to record where this treatment was employed, and this case was most malignant from the start, the membrane involving the nose, pharynx and trachea.

My rule in these cases is to give a large dose of calomel at the beginning, regulating it according to the age, and then to give hourly doses until the characteristic “chop-spinach” movements appear, then the interval is increased until the drug is left off entirely.

I cannot add anything to Dr. Judd’s directions for administering the drug, as I consider that they are sufficiently full to guide one. With reference to certain indefinable fears of ill effects from the drug when given in such heroic doses, I can only say that the ability of patients to take such large doses without ill effects, is, in my opinion, due to the fact that the ordinary physiologic effect of the drug is overcome by the poison or toxin of the disease.

I wish to say in conclusion that I do not believe it produces anemia, because I believe that the disease itself does this profoundly, and any drug which so certainly cuts the disease short, would by that much prevent those blood changes which are responsible for the anemia. Furthermore, I have never seen any disagreeable effect whatever resulting from the administration of the drug, and I have gotten such universally good results from its use that I have been unwilling to relinquish it for newer and more sensational remedies.

TALKS TO GENERAL PRACTITIONERS.

THE TREATMENT OF RETRODISPLACEMENTS OF THE UTERUS.

BY EDWARD E. MONTGOMERY, M.D.,

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RETRODISPLACEMENT of the uterus is the most frequent form of displacement in the multiparous woman, forming, as it does, the first stage of prolapsus. Where the organ is thrown backward in the form of retroversion, and the cervix is more or less fixed, the body of the organ is driven downward in a position of retroflexion. Probably no form of displacement affords greater difficulty in its management by mechanical means than the posterior flexion. The method of treatment of the retrodisplacement, however, must depend upon its duration and the existing complications. In the early stage of the trouble, where the displacement occurs following a recent abortion or parturition, the replacement of the uterus and its maintenance in the proper position by a suitable pessary will frequently bring about a completion of the process of involution and the organ will in a short time maintain itself in its proper place without support. The longer the condition exists, the more marked changes result, rendering it difficult, if not impossible, to overcome the condition by mechanical means. It is important for the successful treatment of such conditions to carefully study the cases and adapt the treatment to the case, rather than the case to the treatment. In other words, no routine treatment will be suitable for every form of displacement. Some patients are made very much more comfortable by the introduction of tampons or a suitable pessary, while others can wear neither without the greatest discomfort and an apparent aggravation of the symptoms which arise from the disease. The great mistake the majority of physicians make in the employment of mechanical means is in not keeping in mind the necessity of first replacing the uterus before the support is put in position. A pessary introduced without the uterus having been previously placed in its normal position but aggravates the distress, as the fundus of the uterus slips down between the posterior bar and the sacrum, and is consequently pinched and irritated. There are three methods usually recommended in the text-books for putting the uterus in its proper position. Two of these can be practiced with safety; the other one should not be employed.

Of the first two methods, one consists in placing the patient in the dorsal position, the limbs separated, and the introduction of two fingers into the vagina, while the other hand is placed over the abdomen. With the middle finger the fundus of the uterus is pushed upward, while the index

finger hooks over in front of the cervix, pushing it backward. In this way, between the two fingers the fundus is carried forward until it can be reached with the external hand and drawn against the symphysis. The pushing back of the cervix necessarily tilts the other end of the lever forward. Occasionally, the curve of the sacrum is so marked that the fundus of the uterus impinges beneath the promontory of the sacrum, from which it cannot be readily dislodged; the dragging upon the cervix with the double tenaculum, while the finger in the posterior fornix pushes up the fundus, will generally serve to dislodge the uterus, when the organ can be carried forward by pushing backward and upward the cervix.

The second method of procedure is to place the patient in the genupectoral position. This not only removes the intra-abdominal pressure, but, by gravity, drags the viscera out of the pelvis. The introduction of the speculum and retraction of the perineum balloons the vagina and the uterus is carried well upward. This does not necessarily, however, correct its position, as while it is situated at the upper part of the vagina it may still be in the retroflexed or retroverted position. The displacement is not immediately overcome, the cervix can be dragged downward and backward with the tenaculum, which will permit the fundus to fall forward. While in this position the patient may have introduced a suitable pessary to maintain the organ in place.

The third method mentioned in text-books, which we condemn, is the introduction of the uterine sound into the cavity of the uterus. This procedure endangers the patient from the possibility of the introduction of pathogenic germs with the sound, and is not unattended with danger. The introduction of the sound will necessarily to a greater or less degree injure the uterine mucosa. The escaped blood forms an excellent culture medium for any pathogenic germs that have been introduced, so this method is not infrequently followed by pelvic inflammation. If the organ is readily replaced, the vagina in a normal condition, the uterus not overly large, a pessary may be placed to maintain it in the replaced position. This pessary should be of sufficient length to drag back the posterior fornix of the vagina, thus making traction upon the posterior part of the cervix, and as this is lifted up, the fundus of the organ must be kept forward. In relaxed vagina, in heavy uteri, and in cases in which the replacement cannot be completely effected, the use of the pessary will prove unsatisfactory.

Not infrequently do we find that retrodisplacement is complicated by inflammatory conditions of the pelvic peritoneum, which result in adhesions of the uterus to the rectum, to the surrounding structures, or the uterus may remain free and adhesions involve the tube and the ovary. In these cases, where the adhesions are long, the uterus may apparently be put in proper position by dragging up the anterior wall of the rectum. The introduction of the pessary to maintain it in place would result in the dragging backward of the fundus, over the pessary, and the discomfort of the

patient is greater than from the condition for which the instrument is introduced. The existence of adhesions fixing to a greater or less degree the fundus of the uterus, does not necessarily demand operative procedure. Where operation is indicated, it need not necessarily be a bloody one. Adhesions, if not too firm and of too long standing, may be overcome by the practice of pelvic massage. The manipulation of the uterus, the dragging from side to side, the gradual pressing down of the hand over its posterior surface, will result in the stretching of bands of adhesion, tearing those that are recent in character, and by repeated practice of the procedure absorb bands of strength too great for tearing.

Various operative procedures have been devised for the treatment and maintenance of the retrodisplaced uterus in position. Thus, Schultze, in cases of recent and not too strong bands of adhesion, advises forcibly bringing the fundus of the uterus forward and maintaining it by the introduction of a pessary. His plan of procedure is to introduce two fingers into the rectum, carry them over behind the uterus and introduce the thumb of the same hand into the vagina against the cervix. As the uterus is pushed up by the thumb, the two fingers in the rectum drag down upon the anterior wall of the rectum and pull it off from the posterior uterine wall. This operation can be accomplished in recent adhesions, but where there is reason to believe the adhesions are old and quite firm, it should be practiced with the greatest caution, on account of the danger of tearing the Fallopian tubes. If the uterus has been brought forward, it can then be maintained by the introduction of a pessary.

Other operative procedures that have been devised for retrodisplacement of the uterus are: First, that of Alexander, which consists in shortening the round ligaments. This operation is accomplished by making an incision upon either side about half an inch above Poupart's ligament and parallel to it. The incision is situated over the pillars of the external ring. In the front part of the opening is seen a small pledget of yellow colored fat which indicates the exit of the round ligament. This is pressed upon, so as to render the round ligament more accessible, an instrument passed beneath it and the ligament drawn out, three or four inches, if necessary. A similar method of procedure is instituted upon the opposite side. The ligaments thus drawn out are sutured in the track and are fastened in the abdominal wall. The objection to this operation is, that it requires two incisions, one upon either side, not into the peritoneal cavity, it is true. It is not applicable to every case. Indeed, it is limited in its usefulness to those cases only in which the uterus and its appendages are free from adhesions. Where adhesions exist, the ligaments are shortened, the organ is subjected to two forces, one pulling it forward, and the other backward, rendering the patient more uncomfortable. An operation which may take the place of this, and has a wider field of usefulness, is that known as ventro-fixation or ventro-suspension. This consists in making a single incision in

the median line, which opens the abdominal cavity and permits the fundus of the uterus to be inspected, the organ to be drawn forward, adhesions broken up, and diseased conditions of the tube and ovary properly treated. The adhesions can be broken up, ovaries and tubes set free, any diseased condition of the ovary or of the tube corrected and the uterus brought forward and fixed to the anterior abdominal wall by the insertion of sutures, fastening it to the peritoneum. These sutures are passed through the peritoneum only, with the view to the formation of a band of adhesion which shall maintain the uterus forward. An objection to the operation is that a band of adhesion is formed between the fundus of the uterus and the anterior abdominal wall, which, when the convalescence of the case is complicated by inflammation, may form a rather dense and firm band which fixes the organ. In subsequent pregnancy and parturition, such a band may be an element of danger. When firm, it gives rise to fixation of the fundus of the organ and to its dilatation at the expense of the posterior wall. This may become so thinned as to endanger rupture by the uterine contractions. The pulling and traction of the ligament is frequently so great as to cause the patient very marked distress and render her willing to submit to an operation for the separation of the band.

Other operations, with a view of avoiding this difficulty, have been devised by Mann, Wylie, and others, which consist in running tucks in the round ligaments by which these ligaments are shortened and drawn forward. The round ligament may thus be shortened by simply folding a portion together and stitching it in the center, this fold extending outward or inward; or, as has been suggested by Mann, that the ligament be divided into three portions by catching at the junction of the middle and inner third; draw this outward and stitch it to the outer part of the round ligament. Then the outer third or the other end of the loop is carried upward and stitched to the side of the uterus. This forms three layers of the ligament. Dudley operates by freshening the anterior surface of the fundus and opens the sheath of the round ligament at about its center. This is carried forward and stitched to the denuded surfaces upon the fundus of the uterus. This method of shortening the round ligament has the advantage that it does not interfere with the normal mobility of the uterus, yet acts as a stay which holds the organ forward and keeps the intra-abdominal pressure directed upon its posterior surface. It produces no inconvenience in subsequent pregnancy, beyond a possible slight traction upon the ligament, which may be at times painful and is less severe than that which occurs after the Alexander operation. This would be the case if the operation had been done according to Alexander's method.

Various vaginal operations have been devised. Thus, Duhressen's operation, which consists in making a vertical incision through the mucous membrane, from just above the urethra to the cervix, pushing off the bladder until the peritoneum is reached, then the introduction of a suture as high

up as can be reached, dragging down upon this, and a second suture introduced near the fundus of the uterus, without opening the peritoneum, the ends of which are carried forward through the vaginal wall. Other sutures may be introduced in a similar way to supplement this, by which the fundus of the uterus is held forward. The operation may be more effectually and quickly practiced by cutting through the peritoneum and drawing down the fundus, which is stitched, as has been suggested. The operation, however, has been found to greatly increase the danger in subsequent parturition. The fixing forward of the uterus interferes with its elevation in gestation, so a case of impaction results, and where the woman goes to full term, the irregular contractions cause the lessened force in the delivery of the fetus, and increase the danger of abnormal positions. Not infrequently a shelf or hood of the uterine wall projects in such a way as to render the delivery by instruments exceedingly difficult, so the danger to the life of the fetus and mother is greatly increased. The round ligaments may be shortened through the vaginal incision; or the round ligaments may be drawn down and fastened into the vaginal wound. Gottschalk's operation consists in shortening the utero-sacral ligaments, by which the cervix is drawn upward, and consequently the other end of the lever must fall forward. In cases of prolapse of the uterus, where the utero-sacral ligaments are very greatly relaxed, the internal shortening of the round ligaments, or the fixation forward of the uterus by suspending it to the abdomen, may prove unsatisfactory. The better plan in such cases would be to take a stitch on either side in the utero-sacral ligament, by the shortening of which ligaments the cervix is held upward, and consequently the fundus falls forward. In these cases of relaxed vagina and long utero-sacral ligaments, if the Alexander or ventro-suspension operations alone are done, the uterus sags down, drags upon the band of adhesion and the patient suffers very great discomfort, which can be obviated by the shortening of the utero-sacral ligaments, as we have suggested. It is evident, then, from this talk, that it is necessary to adapt our means of treatment to the particular conditions which may be before us.

Hay Fever. Müller of Vienna treats chronic hay fever by the use of the following formula:

R Menthol,	3 gms.
Resorcin,	3 "
Alcohol,	14 "

His patients came from the United States and England. They were all more or less neuropathic, and were subject to gastro-intestinal troubles. As he always believed that there was a close relationship between gastro-intestinal disturbances and hay fever, he at once treated the cases by administering alkaline mineral water, using massage and other well-known forms of treatment in that line. In addition, he applied a solution of silver nitrate to the nasal cavities by means of a brush, and irrigated with 7 or 8 liters of water, after which he applied the above solution.

TREATMENT OF SYPHILIS.

BY J. D. THOMAS, M.D.,

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EMPIRICISM enters but little into the treatment of syphilis. To those familiar with the disease, there exists quite a uniformity of views with regard to the lines of treatment to be followed—when differences do exist, they relate principally to matters of detail only.

The treatment of syphilis is regulated by its different stages and, somewhat, by the idiosyncrasy of the individual.

I shall consider, first, the treatment of the primary sore—the chancre; second, the secondary stage; third, the declining stage; and, fourth, the tertiary or sequelar stage.

As stated heretofore, the only local treatment required by the chancre is cleanliness; this is effected by the application of peroxid of hydrogen, followed by black wash or calomel powder. Any of the antiseptics, when not too irritating, may be substituted. Cauterizing the lesion with nitric acid, etc., is absolutely bad treatment. Excision is recommended (but seldom practiced) by some. The gentle cleansing, as above indicated, of the chancre keeps the sore in a condition that is quite tolerable; however, it does not cause any diminution in the size of the neoplasm, nor does it insure the healing of the abraded or ulcerating surface, but as soon as specific treatment is instituted, which is usually after the eruption appears, an improvement in the sore takes place very promptly—the induration begins to melt away and the surface of the chancre heals. This logically brings up the question whether it is proper to treat the initial lesion, before the appearance of the eruption, by mercury internally. The authorities advise the withholding of constitutional treatment until the eruption of the secondary stage appears. The reasons advanced are that the disease may be obscured by so doing and the physician and patient remain in doubt as to the actual existence of the disease, and, in the next place, as the poison does not enter the blood until the period immediately preceding the eruption, it can have no neutralizing or destructive effect upon the germs. Unless one is sure of his diagnosis, I believe that constitutional treatment should be withheld until a positive diagnosis is arrived at. However, the cases are exceptional where we are not able to form a positive opinion in from two to four weeks in advance of this period. Again, there are many cases where our diagnosis is strengthened by confrontation, *e. g.*, Mrs. C. presented herself, on June 19th of the present year, for a sore throat. On investigation, I found her broken out with the eruption of syphilis. She pleaded ignorance as to its source. I examined her husband, but at this time failed to find any evidence of the disease. Seven days afterward he presented himself, when a sore was

found in the sulcus behind the corona glandis. In about a month after the appearance of the eruption in the wife it appeared in the husband. A little explanation upon my part, to the wife, dissipated her ignorance as to its source in her case. Here, in the case of the husband, there was very little chance for a mistake in diagnosis, and early constitutional treatment could be practiced.

As soon as the diagnosis is made the patient should be placed upon specific treatment, without waiting for the eruption to appear. The fact that the eruption is modified by early constitutional treatment is the strongest argument in its favor. Even if the secondary symptoms are mitigated under treatment, if the patient is closely observed, as should be, enough of the symptoms will present themselves to prevent any doubt.

The poisonous fountain is in the chancre, and this has full play until it is antagonized by mercury. If we wait until the eruption appears, the patient is permitted to receive into his blood the accumulated force of the poison from the chancre, for the latter is permitted to proliferate unmolested. But if specific treatment is instituted, a perceptible improvement will be noticed in the chancre—the area of induration will contract and the superficial abrasion or ulcer will undergo the process of healing. This is an important fact to be utilized when the chancre is situated upon the lip or any of the exposed portions of the body. The early administration of mercury is not intended to neutralize the poison in the blood, for it is not there as yet, but is to be carried by the blood to the chancre and thus modify or antagonize the poison *in loco*, and hence is more efficient than excision, the object of which is to remove the seat of poison from the action of the absorbents.

In the treatment of the secondary stage—the eruptive, the active stage—there is only one curative remedy—mercury. There are many salts of this metal described in the pharmacopia; but, after all, the mercury is the curative agent. Some prefer one preparation, others another. The rule is to administer that preparation which best agrees. The protiodid is probably administered more frequently, and by a greater number of physicians, than any other, and simply for the reason, if given in proper doses, that it usually agrees. The amount to be administered is governed entirely by the effect and result in each individual. I usually give, at first, one-and-a-half grains in the twenty-four hours—one-half grain after meals. If with this dose there is no discomfort and the improvement is satisfactory, the dose is not increased. After the eruption disappears, the dose is decreased one-half and so kept until the enlarged glands disappear. Sometimes it is necessary to increase the dose to one grain three times a day, when the disease has a tendency to resist treatment. I prescribe one-half grain *tablets*, the patient taking from a fraction of one to two or more at a dose, thus making the dosage convenient without change of prescription. This method of administration is satisfactory to the physician and agreeable and convenient

for the patient. If the protiodid should cause griping, then a small amount (one-fourth to one-half grain) of opium could be combined with each dose. However, under such circumstances, I prefer changing the preparation to, say, one-tenth grain of the bichlorid or biniodid, or two grains of the tannate, three times a day. Where there is considerable malaise and anemia, I prescribe the following, viz.:

R Hydrarg. protiodid, gr. v-x
 Strych. sulph., gr. ss
 Ferri. sulph., gr. xx
 Pepsin pulv., gr. xl

M. Ft. in capsul. No. XX.

S. One capsule after each meal.

With my patients I insist upon giving them at least two courses by inunction, the first one during the early eruption and another later, as convenience allows. The entire body should be gone over, using one-half dram of unguentum hydrargirum (U. S. P. freshly made) at bed-time, making the application to different areas of the surface of the body successively. The syphilitic eruption is accompanied by a certain amount of infiltration, the inunction acts directly upon this infiltrate and lessens the liability to gummatous or tubercular sequelae.

(Treatment to be continued.)

THE DIAGNOSIS AND PROGNOSIS OF CHRONIC ASTHENIC GASTRITIS (ORDINARY CHRONIC GASTRIC CATARRH).

BY BOARDMAN REED, M.D.,
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WITHOUT attempting to go deeply into the mooted questions relative to the etiology and pathology of the various forms of inflammation of the gastric mucous membrane, with its complications and results, I will discuss with you at this time as plainly as possible the more practical aspects of the familiar type of chronic catarrh of the stomach.

While in its severe typical form it is not as prevalent in this country as in Europe, for the reason probably that there is a less widespread abuse of alcoholic liquors and tobacco here, mild forms of the affection are common enough and often pass unrecognized. It is very frequently treated as nervous dyspepsia with drugs or rest cures, and sometimes by external hydrotherapeutic measures mainly, until finally, when the intestines have become

involved in the catarrhal process, and serious impairment of the general nutrition has resulted, special advice and treatment are sought.

The claim may be very properly made that at least the more common diseases of the digestive system should be treated by the family physician. This is emphatically my own view, and because of it I am endeavoring to simplify and make plain the modern exact methods which are indispensable in the diagnosis and treatment of such affections.

Symptomatology.—The symptoms of a mild asthenic catarrh of the stomach are briefly those of what is commonly called flatulent dyspepsia. They include fullness and vague uneasiness, amounting sometimes to pain in the gastric region, coming on shortly after meals and followed a little later by more or less copious eructations of gas, which may be sour and offensive in taste and smell. There is usually some impairment of appetite, which may go on to complete anorexia in advanced cases, with occasional nausea. In the alcoholic cases and those complicated by marked muscular atony or dilatation of the stomach, there is vomiting of sour fermenting ingesta—sometimes of glairy mucus only. Vomiting is rare in other cases except in acute exacerbations. Heartburn and water-brash may or may not be present. The tongue is usually more or less coated, with an accompanying bad taste in the mouth. But none of these symptoms are diagnostic. You may have a foul tongue and breath from an unhealthy mouth and nasopharynx as well as from a diseased liver and intestines, without catarrh of the stomach, especially when there is gastric fermentation from other causes; and, on the contrary, there may be a clean tongue and the absence of bad taste or belching with a pronounced gastric catarrh, though it is truth to say that this latter combination is much more rarely seen in the form of gastritis now under consideration than in the acid form, in which there is uniformly present an excessive secretion of the gastric juice, along with a large quantity of mucus.

Many and diverse nervous symptoms, including frequently out-and-out neurasthenia, always complicate fully developed and advanced gastric catarrh and when the case has not been actively treated in the beginning, the intestines are sooner or later affected. Then either constipation or diarrhea, or these two conditions in alternation, will almost surely develop.

Diagnosis.—It is not possible to make a certain diagnosis of chronic asthenic catarrh of the stomach without the use of the tube and the more important quantitative tests of the stomach contents hitherto described in this series of talks. The advanced cases with vomiting and pain can easily be confounded with cancer or ulcer, and the earlier or milder ones are constantly mistaken for nervous dyspepsia. Then, even where occasional vomiting of large amounts of mucus without coexisting pain, tumor, cachexia or emaciation make it probable that a catarrhal inflammation exists rather than either ulcer or malignant disease, you would have no means of determining, except by testing the stomach contents, whether the process were

on the one hand a proliferating one, accompanied by an excessive secretion of HCl and demanding the blandest possible diet with alkalies and sedatives in the way of medication, or, on the other hand, the contrary condition of degenerating glands and a lessening of the HCl and ferments, which would call for a more stimulating diet and a more decidedly tonic medication, including the mineral acids, pepsin, antiseptics and astringents. Besides, while in acid gastric catarrh abdominal massage would be contraindicated except in the form of the lightest and most superficial rubbing (*effleurage*), in chronic asthenic catarrh of the stomach energetic kneading (*petrissage*) of the whole epigastric region is very beneficial and often a curative agent of the utmost value.

The sample of stomach contents brought up an hour after the Ewald test breakfast will show you at a glance whether the meal has been properly digested into a uniform thin fluid, as well as give you a rough idea of the amount of mucus in the organ and its probable source, and will enable you to ascertain by chemical tests the total acidity, the proportions of free and combined HCl, the presence or absence of lactic acid, the amount and activity of the pepsin and rennet ferment present, and the extent to which the starch has been converted by the salivary ferment. By a microscopic examination you would learn the degree of microbic infection, and possibly something as to the condition of the epithelium. All this and more you can do if you wish to be very thorough, but if you will merely determine, by the simple tests already described, the total acidity and the amount of free HCl, if any, you will be able to decide whether in case of a great abundance of mucus, you are dealing with an acid or asthenic catarrh of the stomach with a deficiency of the acid gastric juice. With a percentage of free HCl of .060 to .100 or more, with much mucus which you are able to satisfy yourself beyond reasonable question is of gastric origin, you should infer an acid gastritis. If the free HCl is constantly below .030 under the same conditions the catarrh would be of the asthenic type. If the percentage were between these figures the form of gastritis would have to be determined by the microscopic findings or the later developments of the case. In case free HCl should be absent, you should test for lactic acid, which if present in decided amount would awaken a suspicion of cancer. If there is an entire absence of mucus in the sample of contents brought up, there is not likely to be any inflammation of the gastric mucous membrane (though it might be in the terminal stage of atrophy), and any aberration from the normal in the amount of the HCl and ferments could then be attributed to nervous causes, except in the case of the almost entire absence of all the elements of the gastric juice, including the rennet ferment with a total acidity of not over 10 or 12, in which case you would be justified in diagnosing gastric atrophy, especially if the patient were very anemic and emaciated and cancer could be excluded.

But in case you find in the sample of stomach contents a moderate

amount only of mucus and you do not obtain any fragments which under the microscope reveal diseased epithelium, the question is not yet settled. You will then need to proceed to wash out the stomach, following the methods described in one of my former talks. If then, after cleansing away all remains of food and the coarse lumps of mucus which will have usually been swallowed, you bring up more which is thinner, paler and in fine flakes or delicate strings, you may decide, according to Riegel and others, that it comes from the gastric mucous membrane and, therefore, signifies chronic catarrh of the stomach.

According to my own experience, however, this may indicate only a transient catarrhal process, involving some one or more portions of the gastric membrane and capable under treatment of complete cure within a few days, just as often happens with slight catarrhal attacks in the nose and throat. My reason for this opinion is that I have frequently seen such mucus at the first lavage, which after washing out three or four times disappeared entirely, so that subsequent washings brought up no mucus at all. A diagnosis of chronic gastric catarrh cannot, therefore, be based upon even the symptoms and macroscopic findings in the wash water combined until after at least three or four washings, unless the symptoms are very pronounced, as in serious cases, or the amount of mucus is very large. Fragments which under the microscope may show the condition of the epithelium are more likely to be found in the wash water after lavage than in portions of the stomach contents after test meals. But this, too, is a somewhat uncertain dependence, and negative results, such as finding pieces of glandular tissue showing normal cells, is no proof of the integrity of the entire membrane.

The Prognosis, like that of the acid form, is good or bad according to the stage and grade of the affection as well as the age of the patient, and according to the ability and willingness of the latter to make sacrifices and patiently carry out a somewhat troublesome treatment. Those who desire to be cured without help from a tube, and especially without much change from the habits of eating, drinking and exercising, or more often, not exercising, which brought the disease upon them, may be safely promised that they will keep their gastric catarrh to the end of their lives, which will generally be considerably shortened thereby. Cases in which the glandular structures have not been much damaged and in not too old or debilitated persons, can usually be cured in a few months, when the treatment which we shall hereafter describe is faithfully and persistently carried out.

SELECTION.

THE VALUE OF THE PULSE IN DIAGNOSIS AND PROGNOSIS.¹

BY HENRY JACKSON, M.D.,

Boston.

THOUGH I have no new theory to advance as to the value of the pulse in diagnosis, yet I desire to bring the subject up at this meeting because to me it seems a matter of the greatest importance, and one perhaps that we do not consider as carefully as it deserves. The pulse is the final index of the vital capacity of the individual, and therein allows us to judge of the resistance to disease of the individual patient at a stated time: our patient may have a diseased heart, one much weakened by organic valvular disease or by degeneration of the muscular substance dependent upon disease in the heart itself or upon some toxemia, but if the heart is able to drive the blood through the system for the time at least death is not imminent. Therefore the pulse is, as stated, the final index of what the heart can do; so long as the pulse is of fair quality the system is supplied with blood and life is possible.

In diagnosis it is not my wish to discuss the value of the pulse in the various forms of organic heart disease, as, for instance, the Corrigan pulse in aortic disease, and the small thready pulse of mitral stenosis, but rather to consider its value in the diagnosis of some of the more important and often obscure general diseases, especially typhoid fever, miliary tuberculosis, cerebro-spinal meningitis and other diseases of the brain and its membranes.

The pulse of typhoid fever is in uncomplicated cases not very rapid, rising somewhat with each access of fever, but averaging 90 to 100 or less in cases of moderate severity which run their course without untoward accident; under prognosis I shall speak at greater length of the inestimable value of the pulse as an index of the advent of dreaded complications and the exhaustion of the patient by the toxic effects of the specific organism of the disease.

In acute tuberculosis we have a very different picture; the pulse is rapid, averaging 120 or more long before the patient reaches a critical stage of the disease. In typhoid fever the pulse may temporarily be 120, but it never remains for several days at this point unless the patient is severely sick, whereas in general tuberculosis we find great rapidity of the pulse for days, and even weeks, in a patient presenting no signs of immediate dissolution, often very comfortable and anxious to be up and about the room. The rapidity of the pulse in general tuberculosis is of much value, as in both diseases the course of the temperature may be similar, in both diseases there is an absence of leucocytosis, and often the general condition

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of the patient may leave us much in doubt, though in the one hebetude is usually much more marked than in the other. Of course, the Widal reaction in the one case, and tubercle bacilli in the other, may, if present, give us an absolute diagnosis.

In cerebro-spinal and tubercular meningitis the pulse may be almost pathognomonic; in the early stages, during the time that the vagus is stimulated by a moderate degree of irritation, the pulse is slow, or rather, what is the important point in diagnosis, is slow in proportion to the general condition of the patient. To take a case we have before us, a patient who for a day or so has had a moderate fever, who is evidently very sick, with perhaps vomiting and severe headaches; yet we find a pulse of 70 to 90. If the case were typhoid fever the pulse would be more rapid; the slow pulse in the case under consideration is, however, slow because of the direct action of the products of inflammation on the vagus. Therefore, the pulse is no criterion of the general condition of the patient. If there is added to the slow rate an occasional intermittency, we have a still greater assurance that the pulse is dependent upon some direct pathological lesion, and can by no means be considered as an index that our patient is not seriously ill, as is suggested by his general condition.

It is not an invariable rule that the pulse is slow in the early stages of meningeal trouble, but if not continuously slow we find that the rate varies much without any corresponding change in the condition of the patient and independently of the degree of the fever. I would cite two cases seen in consultation, illustrative of the value of the pulse in meningitis. Several years ago I saw in consultation a young child who had been sick several days, was somewhat stupid, had vomited, had fever, and seemed to be very sick: the pulse was 100, and intermitted occasionally. I suggested tubercular meningitis as the most probable diagnosis, chiefly perhaps on account of the pulse, a symptom that the attending physician had looked upon rather as his mainstay in hoping for a favorable issue of the case. My diagnosis was correct. On the other hand, I saw this winter a case where cerebro-spinal meningitis was certainly a possible diagnosis, and yet a rapid, regular pulse made me very doubtful as to the correctness of the diagnosis, and complete recovery in a few days convinced me of the truth of my impressions.

The slow pulse is only seen in the early stages of meningitis, as later in the course of the disease, when the vagus has been paralyzed by pressure or by disease of the nerve itself, we find an extremely rapid pulse, as the inhibitory action of the nerve has been destroyed; to use a metaphor, the engine runs with the throttle wide open.

In cerebral hemorrhage the pulse may again be of great value, when definite symptoms are wanting, as paralysis and allied phenomena; that is to say, in cases brought to a hospital in a comatose or semi-comatose condition, cases so aptly described by Mr. Ernest Hart as "drunk or dying." In alcoholism the pulse is rapid, in cerebral hemorrhage, slow; and hereby,

as in a case I wish to cite, we may make our diagnosis. During my last service a man was brought into my ward by the police: he was unconscious, was tossing about the bed, was flushed. The only history obtainable was that two days previously he was found in a doorway, taken to the station house, where the diagnosis of intoxication was made, then was removed to the city prison, whence he came to the hospital. Careful physical examination showed no fracture of the skull, no evidence of external trauma; strong stimulation of the orbital nerve at its exit gave evidence of a slight left facial paralysis and the left side was moved less vigorously than the right side; the neck was a little stiff. Leucocytes, 12,800; lumbar puncture, negative; temperature, 99°. His pulse was 40, a factor that to my mind rendered simple alcoholism impossible. The evidence of paralysis was slight and not easy to obtain, the pulse was evident. The man died the day he entered, and autopsy showed fracture of the skull and extensive laceration of the brain, with subdural hemorrhage. In view of the diagnosis that I made, I was criticised because I had not suggested trephining; I considered the matter and decided against it, because the severe general symptoms without marked paralysis made it evident to me that the man was suffering from extensive cerebral trouble, rather than from total destruction of a limited area, which might be amenable to operative procedure.

Dr. Bowditch has recently called attention to the value of a rapid pulse in the diagnosis of early tubercular trouble. On the other hand, an extremely rapid pulse without evidence of serious disease may be suggestive of exophthalmic goiter, as in a case described to me in which later goiter developed.

In many other diseases the pulse may assist us in forming our diagnosis, as, for instance, in the early diagnosis of acute follicular tonsillitis and diphtheria, the one usually associated with high fever and rapid pulse; the other in the beginning often giving rise to only slight fever, while the pulse may not be markedly quickened unless toxemia has already taken a severe hold upon the patient.

I have spoken of the value of the pulse in the diagnosis of typhoid fever, but in prognosis we have in the pulse what I believe to be an infallible guide. In uncomplicated cases the rate of the pulse is slow relatively to the degree of the fever and the general condition of the patient. When the pulse is continuously rapid, the prognosis becomes proportionately grave, with the increase in the rate, though no other alarming symptoms arise to render us doubtful as to the outcome of the case. Leaving out of consideration hemorrhage and perforation, a rapid pulse is an index that the patient is in danger of succumbing to the specific toxemia produced by the disease. The pulse is to us an index of the effect upon the individual patient of the poison of the typhoid, and is of far greater value than any other one symptom or any group of signs or symptoms.

In my early student days I read an article, I think by Dr. Wilson, of

Philadelphia, stating that in typhoid fever the danger line was reached when the pulse registered 120; and all cases that I have seen since that day have only confirmed in my mind the great dependence to be placed upon this axiom. I have seen patients die who had only a rapid pulse as indicative of danger, while again and again I have seen patients recover where the pulse ran from 110 to 120, yet they were very stupid, had involuntary passage of urine and feces and perhaps frequent vomiting. I am so sure of my ground in this matter that in the individual case I dare to make a favorable prognosis if the pulse is slow, no matter how unfavorable the other symptoms may be. On the other hand, a rapid pulse, independent of any complication, as hemorrhage or pneumonia, causes me great anxiety.

After careful consideration of this matter in a considerable number of cases, I feel convinced that the danger line is reached when the pulse becomes 120. Of course many cases recover when the pulse is rapid, but not without a severe struggle for life.

The remarks which I make as to the prognosis in typhoid do not refer to cases complicated by intermittent diseases or by perforation and hemorrhage. In such instances, the value of the pulse lies rather in diagnosis than in prognosis.

A sudden rise of the pulse without apparent cause suggests hemorrhage, especially if accompanied by a fall in the temperature. In this connection we must remember that the fever may fall by crisis, but in such instances with the fall of temperature comes a corresponding fall in the pulse, and the general condition of the patient is decidedly favorable.

In perforation the pulse is of the greatest value, as in the following case. Last summer, at the time of my visit, one of my patients was perfectly comfortable with a pulse of 80: at half-past one my house physician, Dr. Stevens, telephoned to me that the man had a pulse rising rapidly, had pain in the right side of the abdomen, an access of fever, with an expression of anxiety. Examination showed no blood in the bowel, the pulse was 120, there was a leucocytosis of 15,000, and there was rigidity of the right side of the abdomen. The surgeon who saw him in consultation agreed with me in the diagnosis and found a perforation when he operated at four o'clock. In this case the leucocytosis was of great value, as I have never seen leucocytosis in an uncomplicated case of typhoid fever. Hemorrhage was ruled out by the rise in temperature, and the absence of blood by rectal examination.

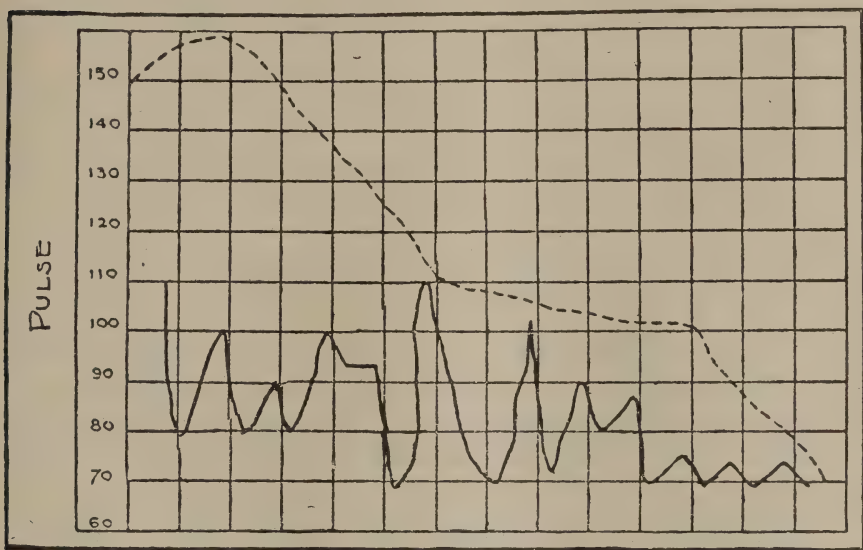
The pulse may be rapid in typhoid fever in other complications, as otitis media and phlebitis, without rendering the prognosis unfavorable: whereas in acute inflammation of the parotid the prognosis is grave, more so, I think, than when pneumonia or pleurisy is the complicating pathological factor.

In convalescence the pulse is often rapid, and then of no serious import; it is the rule that a patient will pass through a severe typhoid with a pulse

not more than 110, and when he first begins to get about have a pulse of 120 or much higher, without the slightest indication that we have any serious danger to combat. Further, many slight troubles in convalescence, as constipation, excess in diet, fatigue from seeing friends, cause a sharp rise in the pulse.

I have once seen a slow but very poor pulse in typhoid in a man that was seriously sick; examination of the heart showed that the pulse was not a sufficient index of the action of the heart, in that many beats were so feeble and inefficient that the wave was not transmitted to the wrist.

In the first volume of the medical and surgical reports of the Boston



CASE I. Parietal disease of the heart. Dotted line shows the apex beat.

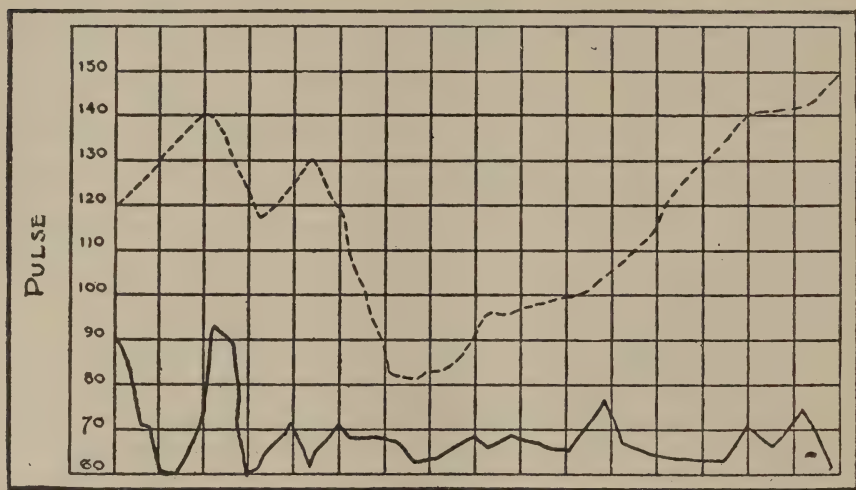
City Hospital is a valuable article upon typhoid fever, by Dr. Upham. He speaks of the prognostic value of the pulse and states that in 65 cases that recovered the average highest pulse was 108, while in 14 fatal cases the average highest pulse was 140.

I have looked over a large number of charts of typhoid fever cases in the Boston City Hospital, and found the same relative proportion of deaths to the pulse-rate.

Finally, I wish to quote from Dr. C. Ellery Stedman's valuable essay on typhoid fever, published in the third series of the City Hospital reports. In this essay Dr. Stedman says, "Temperature for diagnosis is invaluable. For guidance during the disease I rely on the pulse." "I have seen no patient die whose pulse has not reached 120, twenty-four or more hours before death," and finally, "In these ten years the pulse has given the warning of ap-

proaching trouble even when the temperature has signified nothing untoward."

I wish to call attention to one very marked sign of cardiac weakness that so far as I know is not mentioned by most writers. Dr. Whittier has referred to it in a short article in the *Boston Medical and Surgical Journal*. Namely, a discrepancy between the rate of the heart beat and the pulse as felt at the wrist; in many cases it is difficult to count the pulse because of its irregularity or the constantly changing rhythm, though we are conscious that a feeble pulse is occasionally felt beneath the finger, but in the cases under consideration no pulse wave is felt. This condition may be said to represent



CASE II. Dilatation of heart, probably parietal disease. Pulmonary infarction. Death. Dotted lines show the apex beat.

the acme of cardiac weakness and may be responsible for some of the cases in which a slow pulse is reported in fatty degeneration of the heart. This discrepancy between the rate of the pulse and the apex beat I have seen frequently in great dilatation of the heart, dependent upon disease of the myocardium, much less often in valvular disease of the heart. I have noticed the same phenomenon in acute degeneration of the heart as seen in infectious diseases, notably in typhoid fever and in diphtheria. In diphtheria it may be seen during the acute stage, and also in the serious cases of cardiac weakness which appear late in convalescence, perhaps dependent upon diseases of the nerves regulating the action of the heart, similar to the specific neuritis which causes paralysis of the muscles of the nasopharynx or the muscles of the extremities.

The following cases give a good illustration of the phenomenon:

CASE I. Man, forty-five years. Great alcoholic excess; short of breath

for six months; great general edema; cyanotic. Pulse irregular, intermittent; heart dilated; at the apex was a systolic murmur. He gradually recovered and was discharged in a month. On entrance the apex beat was 160, while the pulse was 110. For ten days the apex was much more rapid than the pulse, while later in convalescence they coincided. (See Chart I.)

CASE II. Man, forty-five. No alcoholic excess; no rheumatism. Arteries sclerotic. Heart much dilated. Great improvement at first in hospital. Then many attacks of pulmonary infarction; acute and rapid dilatation of the heart, great edema and death. (See Chart II.)

These two charts are illustrative of the condition of great weakness of the heart in which a large proportion of the beats are so feeble that no wave is transmitted to the wrist.—*Boston Med. and Surg. Jour.*

CORRESPONDENCE.

THE THEORY OF PUNISHMENT.

To the Editor of THE INTERNATIONAL MEDICAL MAGAZINE:

THE growth of crime in every phase is one of the phenomena of our higher civilization which is attracting the careful study of reflective scientists. It was Madame de Stael who said in her "History of the French Revolution" that few men understood the history of their own times; and this remark is probably as pertinent to the conditions a century later as to her own. A new civilization is being launched in a new world which has begun to permeate the parent nations, and mankind is passing into a new moral, social and political regime where the rights of the individual are becoming constantly accentuated.

This great change is not coming by any sudden explosion of moral and political insanity, which became epidemic in France and destroyed everything in its path—clergy, monarchy, aristocracy and ancient, established usages in the moral life of the nation. But we are none the less being rapidly placed in new economic and social relations; and every nation of the earth, to a greater or less degree, shares in the unrest. Few of us have realized that the war in Cuba was begun by the operation of economic conditions in the old world; and now, as the result, we are drawn into the contest for supremacy among the nations of the earth. What affects the nation as a whole affects the individual in his integral portion, and no better illustration of this truth can be found than in France, where the peasant of the country is seeking, like the Parisian, to shirk the duties of domestic life.

National decadence threatens; but it begins in the individual, and the cure will come from the same source.

In our own country, crime and insanity are the weather gauges of our civilization, and the basis upon which to estimate our stability for the future. The medicine of the past quarter century has taught this economic truth—that crime is a social disease which must be treated, and that an occasional radical surgical operation, like decapitation, neither cures nor ameliorates. As measures for the improvement and punishment of criminals our institutions are without results, except in a negative protective sense. Punishment by any means in no way limits crime. Where the most horrible punishment is meted out, the worst crimes increase. The only good accomplished by these executions is the removal of the offender from the living and the consequent limitation of his depredations and that of his progeny. As a relief to society, therefore, and a remedy to crime, our penal institutions accomplish nothing. In accepting this fact from our prison experts, we must cast about for a new basis upon which to operate against the vicious tendencies in humanity which the terrors of hanging and burning have in all time failed to cure. We are necessarily forced to the theory of prophylaxis from that of punishment, and it will not be long before we shall witness its operation. What right has the criminal to visit suffering upon the unborn and those near him any more than he can assault with impunity any one on the street? There are some so-called inalienable rights of man that are going to be righteously curtailed. If a man or woman cannot give a child a clean pedigree it is pertinent to inquire what happiness to the child or good to the world is to come from this outrageous injustice. The greatest injustices cannot be reached by earthly courts, as every physician knows.

A patient of mine, of excellent character, married a man who had at one time, unknown to her, served a sentence in the penitentiary; and, naturally, their son is a professional thief. Had a marriage law made this man's record even a necessity to a license, or a bar to his marriage, this calamity would have been averted. In another case, a syphilitic, with cerebral symptoms, married against my advice. This is an outrage against society and the unborn.

The first step has been taken in Ohio, where a marriage law was defeated. That law was intended to govern just this abuse—the marriage of the unfit. That it is an eminently practical law cannot be questioned; and as people witness its benefits it will be extended in its scope.

Very specious arguments are advanced against measures intended to limit the exercise of some of man's supposed inalienable rights, but the inexorable survival of the fit will make the prevention of crime and insanity a blessing and a mercy to those who otherwise must carry a life-long punishment about. Such a law is the only alternative against the overwhelming burden of crime, insanity, pauperism and incompetency. M. M.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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On the Occurrence of Rheumatic Fever without Arthritis. Hawthorne (*The Practitioner*, Sept., 1899) points out the difficulty in diagnosing rheumatism in the absence of joint lesions. Continued febrile movement without discoverable cause is not uncommon, and may be due to typhoid fever, tuberculosis, or, perhaps, pernicious anemia, leucocythemia or acute leukemia or rheumatism. Of course a blood examination will serve to eliminate some of these, but rheumatism will often be overlooked, for it seems to be a deeply-rooted notion that a parallelism exists between the extent and severity of the arthritis and the range of the febrile movement. While it is true that they are generally associated, that the fever is due to the arthritis is only partly true. It would be better to insist on a common cause and then one is better prepared to admit the possibility of either occurring alone. The author cites a case of a female, aged 18, with headache, backache, thirst, anorexia, sore throat, temperature 103.6°. Examination showed slight faucial injection, some tenderness on pressure over knees and shins, no redness or swelling of joints, no skin eruption, no apparent disease of the abdominal viscera, no vaginal discharge, past or present. No anemia, skin moist, but no free sweating. Tongue clean, bowels constipated. Thus the condition remained for 10 days, then the temperature became subnormal and remained so for a couple of weeks, when arthritis developed, but promptly subsided under rest. Had this latter occurred simultaneously with the febrile attack, apart from the fact that the joint trouble was limited to one joint, no difficulty would have been experienced in the diagnosis. Though the febrile movement in acute rheumatism usually corresponds to the extent and severity of the joint trouble, it is quite possible to have acute rheumatism without arthritis, as Graves, Sir Thomas Watson, Fuller, Taylor, and others have insisted.

On the Value of the "Fixation Abscess." Bauer (*Virch. Archiv., Bd. CLVI.*) expresses himself very cautiously in regard to the efficacy of the abcès de fixation of the French. These are aseptic abscesses, induced by the subcutaneous injection of turpentine, and are employed in grave

toxic conditions, and their value is said to be due to the leucocytosis engendered. The author used them experimentally in animals and clinically in pneumonia, typhoid fever and erysipelas.

Peritonitis as a Cause of Acute Appendiceal Colic. (*Arch. gen. de Med.*, July, 1899.) Trippier and Pavios suggest a local peritonitis as the cause of acute appendicular inflammation, with pain, vomiting, obstipation, tympany, often met with as the initial symptoms of appendicitis. This local peritonitis may have been due to a primary or secondary inflammation of the appendix, this latter originating in some neighboring organ—as the ovary. The authors reject the theory of the entrance of a fecal concretion into the appendix, also that of Dieulafoy, who argued for an inflammatory closure of the appendix with the formation of a sac; for in the many cases examined they found that no matter how changed the appendix, unless associated with a local peritonitis, “la crise appendiculaire” failed to develop.

Insufficiency of the Adrenals as a Cause of a Symptom-Complex of Acute Course (not Addison's Disease). Sergeant and Bernard (*Archiv. gen. de Med.*, July, 1899) describe a group of cases in which the symptoms are those of Addison's disease, but without the bronzing, and suggest that only those associated with pigmentation be called *Morbus Addisonii* in order more sharply to differentiate them. The condition they describe is due to some destructive process in the adrenal, as carcinoma or tuberculosis, and occurs in 3 forms: (1) Sudden death; (2) acute, with abdominal pain, vomiting, diarrhea, anorexia, exhaustion, ending shortly in death; (3) subacute, gradual and progressive loss of strength with vomiting, anorexia and, perhaps, diarrhea. Attention is merely called to these cases to point out the occurrence of adrenal insufficiency without bronzing.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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Aneurism of Coronary Artery; a Report of Two Cases. Copps (*Amer. Jour. of the Med. Sc.*, Sept., 1899) reports two cases of this interesting and rare condition. The first was in a man about 48 years of age with no history obtainable. The death was sudden. The heart weighed 300 gms. The aneurism was the size of a pigeon egg, just beyond the commencement of the left coronary artery, and was partly filled by a thrombus,

but the lumen was not obliterated. The second case was a man of 39 years, syphilitic and alcoholic, who died of pneumonia. The aneurism was the size of a hazel nut, also in the first part of the left coronary artery. The lumen was not obliterated. In both cases the microscopic examination showed the lesions of a chronic arteritis. Neither had ruptured. Copps collected 19 cases of the affection. It predominates in males (17 to 2). Age has apparently little influence. Two cases occurred in very young children. More cases were under than over 40 years. The etiology is obscure. The diagnosis has never been made during life. It does not give rise to adventitious sounds, and it does not increase cardiac action; and it is doubtful if the affection has any characteristic symptoms. The disease often terminates in death from rupture into the pericardium (11 cases). In the others the lesion was accidentally discovered at autopsy.

Congenital Heart Disease; a Study of Thirty Cases. Townsend (*Archiv. Pediat.*, Sept., 1899) analyzes 30 cases. Thirteen of 19 cases kept under observation died at an average age of 3 years, the youngest being 3 hours, the oldest 9½ years. Of 6 living cases the youngest is 4 months. The oldest is 28 years. Cyanosis was present in all cases, with one exception. Cardiac signs were absent in one-third of the cases. All of these were cyanosed. Two of these came to autopsy and showed marked malformation. In two-thirds murmurs were present, generally diffuse and systolic in time, with or without a thrill, and loudest either at the base or apex. He reports one very interesting case of an Italian woman, aged 28 years, who had been cyanosed since birth, but shows no other symptoms except a soft systolic murmur at the base which was probably functional and disappeared under treatment. She has borne 3 children, 2 of which died at birth and the third is well and not cyanosed. The mother remains perfectly well. This woman's blood was never above the normal in number of red cells. The ductus arteriosus and foramen ovale are open at birth, and to determine whether this condition gave rise to a murmur Townsend examined 100 cases of new-born infants. In but one was a murmur heard. This had disappeared by the seventh day. The number of red corpuscles was increased in all but one of 14 cases, as is found to be the case in cyanosis from other causes. The average blood count in 13 cases was 7,573,585 red cells per c.mm.

Ox Blood as a Remedy. Blech recommends ox blood as a useful therapeutic agent. The blood is caught direct in an antiseptic vessel and beaten for a few minutes with a sterilized glass rod to prevent coagulation. It is then bottled into sterilized flasks. Certain commercial preparations consist of ox blood prepared in this way, to which a little whiskey and dried white of egg has been added. For internal use a little salt and pepper improves the taste, and boric acid (1:1,000) tends toward its preservation. This preparation is an excellent tonic and blood enricher; the dose is 15-30 gms. 4 to 6 times *per diem*, before meals. For obstinate ulcers the external application of a tampon of gauze, saturated in the preparation, is productive of highly beneficial results.—*Pharm. Zeit.*, 43,860, after *Deutsch. Med. Zeit.*

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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The Deceptive Standstill in Appendicitis. Dieulafoy (*Bull. de l'Acad. de Med.*, 1899) points out the necessity of an early operation on the following grounds: (1) Grave conditions may be masked by apparent improvement. (2) The sudden disappearance of pain is not always a sign of recovery, but is a very deceptive symptom. (3) The worst pathologic changes may go on while the patient is apparently comfortable. (4) In this condition, the abdomen is distended, the muscles contracted, the pulse still rapid even when the temperature falls; urobilin and albumin are often present in the urine. (5) This deceptive condition may appear at any day of the disease, the second, fourth, and even sixth. (6) These conditions are usually followed by a change for the worse and death.

The Diagnosis of Esophago-Tracheal Fistulas. Kohlenberger (*Deutsch. Med. Wochens.*, 1898, No. 23; *Centralbl. f. d. Med. Wissensch.*, 1899, No. 32) describes an ingenious method of diagnosing fistula from the esophagus into the trachea, which is not easy except when food swallowed without reaction is afterward coughed up. A patient who had long complained of pain in swallowing was seized suddenly while drinking wine with a feeling as if at the entrance to the stomach something had been torn, whereupon during a severe attack of coughing he coughed up wine and bloody expectoration. It could be established that the patient, who suffered from fetid expectoration, swallowed morsels of food without difficulty, while fluids often provoked attacks of coughing, and by these were brought up again. Nothing abnormal was found with regard to the internal organs. No trouble could be made out laryngoscopically. In order to reach a diagnosis, the following procedure was now tried: An ordinary stomach tube was introduced with the fenestrum turned forward, while the patient was made to breathe deeply. Before the open end of the tube a small flame was held. The flame was then observed to be strongly drawn in upon inspiration and blown outward upon expiration. When the lower end of the tube reached a point 31 cm. and the upper fenestrum 25 cm. from the

incisor teeth, the light was suddenly extinguished. From that point on up to the entrance of the stomach the above-mentioned normal conditions were again present. At the autopsy there was found at the corresponding point, that is, at the level of the bifurcation of the trachea, an ichorous ulceration of the esophagus the width of 4 fingers, and opening into the trachea. The ulcer was carcinomatous. Kohlenberger believes that the proceeding just described may be relied upon for the successful diagnosis of esophago-tracheal fistula in every case.

Contribution to the Pathology of Hepatic Colic. D. Mayer, of Carlsbad (*Proceedings of the Congress f. innere Med. in Karlsbad, Allg. Wiener Med. Zeitung*, 1899, No. 36), disputes the statement that every hepatic colic is caused by a cholecystitis, because of a series of experiences described by him from which it must be concluded that other causes may be responsible. In discussing gall-stone colics he attacks the position of those surgeons who advise an early operation. He maintains that it is not always possible to distinguish with absolute certainty those which result in the passage of stones (*erfolgreich*) from those that do not—those that are fruitless (*erfolglos*). This is shown very clearly by such an attack which ends with the passage through of the stone, yet during the days or weeks, while the stone is wandering about, numerous other apparently fruitless colics occur. These the writer designates intermittent (*saccadirte*) gall-stone colics which, he claims, are common, frequently occurring in attacks which closely follow each other and are relieved with difficulty by hypodermics of morphin. Nevertheless, they should not be classed as fruitless. Mayer, referring to the influence of the Carlsbad waters upon cholelithiasis, denies that these waters have any cholagogue action. He thinks that they produce their effects by removing harmful conditions, all mechanical and chemical obstacles to the normal, bile-secreting function of the liver cells; that through a favorable influence upon the circulation in the liver and the gastro-intestinal canal, the inspissated bile is enabled to escape more readily and its flow thus promoted. The flow of bile is assisted by the removal of the chronic constipation and at the same time the diuretic effect of the cooler springs is not to be underestimated, since in chronic jaundice, through a free excretion by way of the kidneys of the bile-producing materials, hepatic intoxication is prevented.

Floating Liver and its Clinical Significance. Einhorn (*Med. Rec.*, Sept. 16, 1899) classifies under the term floating liver the usual downward and inward displacement of that organ. He claims to have seen 30 cases out of 804 patients, or 3.7%, the affection like the displacement of other abdominal organs being much the more prevalent in women. While the corset is a frequent cause, it may result also from pregnancy, the removal of abdominal tumors, falls, lifting heavy burdens, etc. The author reports a number of cases with various symptoms, including those of indigestion, hepatic colic, etc.

NEUROLOGY.

UNDER THE CHARGE OF

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Symptoms Following Lumbar Puncture in Tabes Dorsalis.

Babcock (*Amer. Jour. of Insanity*, Vol. LV., No. 4, p. 607), in view of the improvement in the ataxia of general paretics after lumbar puncture, experimented with the operation in 3 cases of tabes dorsalis. The first patient was in the paralytic stage of tabes, and presented the symptom-complex of increased intradural tension. After puncture, the pressure symptoms were much lessened, gradual improvement took place in the gait, and the physical condition was bettered. The second case was one of suspected tabes in which, after puncture, the classic symptoms were quickly developed. A man in the pre-ataxic stage of tabes with associated melancholia was the third patient, and the operation was without any result. Babcock considers the cases experimented on too few for valuable deductions to be drawn, but he thinks that the results obtained suggest both diagnostic and therapeutic possibilities.

A Clinical Study of Twenty-four Cases of Paralysis Agitans.

Collins and Muskens (*N. Y. Med. Jour.*, July 8, 1899) reports the observations made in 24 cases of Parkinson's disease, with particular reference to the attributed and apparent causes, the relative frequency, the initial symptom and mode of onset, and the factors influencing the course of the disease. Natives of Ireland were the most frequent victims, their environment being the explanation of this peculiarity. The fifth decade of life was most productive of sufferers from this disease. Direct heredity played an important role, although 16% of the cases studied had a history of indirect heredity. Neither mental nor physical overwork seemed to cause special liability to the disease, although psychic or emotional trauma was active as alleged cause. The characteristic symptoms were found in the patients observed, and the type of the disease was preponderantly bilateral. Purves Stewart's symptom (toe curling) was not observed, although 25% of the patients suffered from painful involuntary muscular contractions. Hyoscin and duboisin are strongly recommended by the authors, especially given hypodermatically. Bromids should not be used. Gelsemium and veratrum viride occasionally influence the tremor and rigidity.

A Case of Narcolepsy. MacCormac (*Lancet, Lond.*, Aug. 26, 1899, p. 565) reports a case of narcolepsy with a possible definite exciting cause. The patient was a young woman who, immediately after having a number of teeth extracted, began to feel unusually sleepy. Soon afterward she be-

gan to sleep under the most varied circumstances, being unable to keep awake. The sleep would last from 3 to 10 minutes, and between the attacks of sleep she felt quite clear, but was readily fatigued. All the organs of the body appeared to be healthy, but mentally and physically she was lethargic. No symptoms pointing to hysteria or epilepsy were present. The patient improved greatly under the use of tonics and nutrients.

A Study of Delirium. Hirsch (*N. Y. Med. Jour.*, July 22, 1899, p. 109) endeavors to dissipate the obscurity surrounding the conception of delirium. He considers its striking features to be abolition of self-consciousness, incoherent conceptions, the presence of sensory and motor irritation. The difference between delirium and dreaming is the transformation in the former of intra-psychic events into motion. The condition is to be differentiated from acute maniacal excitation; from the effects of pathologic passion, especially from melancholic frenzy and raptus melancholicus; from hallucinatory confusion and from certain varieties of weak-mindedness, of confusional dementia and confusion in speech. Delirium almost always indicates inanition, and is usually a grave complication in any disease. The treatment of delirium is determined by the therapeusis of the underlying disease, although remedies directed to the symptom may be employed.

Report of a Case of Complete Monocular Blindness Following an Injury to the Head, Attended by Full Restoration of Vision. W. C. Posey (*The Phila. Med. Jour.*, Aug. 19, 1899) reports a case as interesting to the neurologist as to the ophthalmologist. A man received a severe blow over the left eye, and was stunned for 15 minutes, and suffered excruciating pain in the left eye and temple. The pain gradually ceased. No marks of external violence were observed. About 36 hours after the accident much pain was felt at the back of the left eye, and sight began to fail. At the end of the fifth day after the accident the eye was totally blind and an examination made on the sixth day showed that the movements of the eye were good and that the pupil was slightly larger than that of the other eye and did not respond to direct light stimulus, although it reacted consensually. The left optic nerve head was much paler than the right, the venous pulse was much accentuated, and the veins of the disc and near the disc appeared almost to collapse at the diastole of the heart. The vessels were of good size and the arteries did not pulsate. The right eye was normal. The patient was placed in bed, leeches were applied to the left temple, the bowels were opened by salines, a dram of mercurial ointment was rubbed into his body night and morning for four days, and later strychnia and iodid of potassium were given. The blindness was only transient. It is this transient loss of vision which makes the case important, inasmuch as examples of such a condition resulting from trauma about the orbit are very rare. Three such cases were reported by Nettleship in 1895. In Posey's case no apparent signs of fracture were present, but the pain on blowing the nose, and the throbbing sensation which accompanied it, on the third day after the injury, suggested that a fracture of the wall of one of the accessory

sinuses might have occurred and been the primary cause of the blindness. The lesion was certainly retrobulbar, and was sufficiently extensive to completely interrupt for a time the function of the optic nerve, but the damage to the nerve was transient, as shown by the complete recovery of vision and the return of the nerve to its normal appearance. It seemed probable that the sphenoid was fractured and that neuritis followed. The lesion could hardly have been primarily within the optic nerve, as the impairment of vision occurred comparatively late.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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The Early Recognition of Kidney Disease, Especially in its Reference to Life Insurance. Rockwell (*N. Y. Med. Jour.*, Sept. 23, 1899) holds that a perfectly healthy person does not pass albumin and if this be found, even in very small quantities, at repeated examinations of the urine of an applicant without any other discoverable cause, life insurance companies are justified in refusing the risk, on the ground that the kidneys are probably unsound. On the other hand, large amounts of albumin may be passed after excessive exertion without the existence of any renal lesion. The writer lays especial stress upon the danger of overlooking chronic interstitial nephritis, especially in its earlier stages. Whenever he finds the specific gravity of the urine of any person over 40 years old constantly too low—1.005 to 1.015, especially when obtained during the height of digestion, he expects to find hyalin casts if he looks long enough for them. The urine, even with this low specific gravity, is usually distinctly acid, is pale and clear, containing little or no sediment, in marked contrast to the chronic diffuse form. The diurnal quantity is usually increased, and the solids and urea are diminished in quantity, although the chlorids are not diminished to the extent they are in diffuse nephritis, owing, perhaps, to the fact that anasarca is not so general. The subject often has occasion to rise at night to pass his water. Albumin may be present or absent. It is never in large

amounts, and some observers state that the disease may run its course without its making its appearance. Rockwell thinks, however, that if a sufficient number of careful tests are made it will be discovered. In such sediment as one is able to get, preferably by the centrifuge, may be found hyalin casts, cylindroids, and an occasional leucocyte. Uric acid and oxalate of calcium are fairly constant. Rockwell usually preserves the urine with borolyptol, places a quantity in a conical glass, allows it to remain over night, decants all but a small portion, and puts the remainder in a centrifugal machine, in this way feeling fairly certain of obtaining the casts if they are present. The casts may be so few that only with the greatest care can they be discovered. In the diagnosis of this form of nephritis we are greatly aided by our examination of the heart, for hypertrophy begins early. Arterial tension is high from the beginning, and the second sound at the base is usually accentuated.

The Medical Treatment of Movable Kidney. (*Stengel Univ. Med. Mag.*, Sept., 1899.) Two plans of purely medical treatment of this condition are offered, the first one intended to supply the peri-renal fat which has become deficient; and the second, the support of the kidney by a proper abdominal bandage and pad. The first of these methods is accomplished by forced feeding, and is applicable to those cases where the condition is attended with marked emaciation. A case is reported where, under such a course of treatment, there was a gain in weight in 4 months of 36 pounds, at the end of which time the kidney could no longer be felt and was certainly not movable. In other cases, where there is no emaciation or loss of peri-renal fat, an abdominal belt with a pad attached is employed, the pad to be so shaped and applied as to make pressure upward, backward and toward the right. Two cases are reported as being benefited to a marked degree by this mechanical treatment. H. M. C.

Renal Incompetency. Richter and Roth (*Berlin Med. Soc.*, June 21, 1899) state that it was formerly supposed that if the kidneys were working properly a certain amount of urea, chlorids, etc., would be excreted daily; that, therefore, an examination of the urine would show whether renal incompetency was present or not. This is not always the case, and they recommend the testing of the molecular concentration of the blood serum by ascertaining its freezing-point. The kidneys constantly counteract this tendency by excreting from the blood a concentrated fluid, thereby preventing the accumulation in the blood of an excess of the products of metamorphosis; hence, the constant normal freezing-point of the blood is a sign of the sufficient action of the kidneys. The freezing point of the blood is not more than 0.56° less than distilled water. If it is lower than that it is an indication that there is renal incompetency. Oxygenation of the blood will also reduce its freezing-point, but this can be eliminated by shaking the blood with the oxygen in a test tube. If the low freezing-point is due to a lack of oxygen, it will rise; if it is due to renal insufficiency, it will not be affected by the oxygen.

DERMATOLOGY.

UNDER THE CHARGE OF

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Symmetrical Areas of Solid Edema Occurring in Grave's Disease. Morrow (*Brit. Med. Jour.*, July, 1899) reports the case of a 45-year-old woman suffering from exophthalmic goiter and patches of solid edema upon the legs. In December, 1898, the patient presented such symptoms of myxedema as swelling of the face, thinning of the hair, loss of expression, loss of power in the hands and loss of special sense in the finger tips. There was also marked edema of the ankles, extending half way up to calves. The patient took 5 grs. of thyroid extract on alternate days from January 6th to February 3d. During this period she improved greatly. The case then developed enlargement of the thyroid gland, attacks of palpitation and throbbing, slight exophthalmos and tremor of the hands. Graefe's sign was present and sweating could be easily induced. "On the front and outer aspect of both legs are symmetrical raised areas of swelling, beginning 2 inches above the ankles and extending upward 7 inches. Each area is about 3 inches wide, with sharply-defined, hard edges. The swelling appears to occupy the skin and subcutaneous tissue, is dense to the touch, and does not easily pit upon pressure. The skin covering the areas in question is distinctly hypertrophied, and presents the characteristic changes of elephantiasis." Patches of solid edema are known to occur in Grave's disease, but the author has found no reference to a symmetrical distribution.

The Nature of the Xanthomata. Pollitzer (*N. Y. Med. Jour.*, July 15, 1899) presents an admirable article upon the histology and pathology of the various forms of xanthoma. He maintains that the flat xanthoma of the eyelids is a disease distinct and apart from xanthoma multiplex, which is closely related to xanthoma diabetorum. The latter two affections bear such close clinical and histological resemblances as to cause the author to look upon the processes as identical. Diabetic xanthoma commonly undergoes involution after a brief period. The nodules of xanthoma multiplex have also been recorded in cases to have disappeared. Glycosuria is absent in a certain number of

cases of diabetic xanthoma. "According to Crocker, in four-fifths of all the recorded cases of xanthoma multiplex above puberty, about 60 in number, there was chronic jaundice, due to severe lesions of the liver. On clinical evidence there is no sufficient reason for the separation of xanthoma diabeticorum from xanthoma multiplex. Adding, therefore, the 25 cases of xanthoma diabeticorum to the above number of xanthoma multiplex, we have a total of 85 cases, in 73 of which a severe systemic disturbance was present. "I think we are justified in regarding xanthoma multiplex (including the diabetic variety) as an irritative process depending on a toxemia of hepatic origin or on that of a still unknown pathological complex, one of whose manifestations is glycosuria." The author then details a description of the histology of flat xanthoma palpebrarum, based upon careful microscopic study. He makes the original and ingenious claim that the xanthoma cell in xanthoma planum is a degenerated muscle fiber derived from the orbicularis palpebrarum and embryonically misplaced in the skin of the eyelids. In support of the myogenetic origin of xanthoma of the eyelids, he offers the following clinical and pathological facts: (1) The absence of any clinical signs of tumor. (2) Its almost exclusive occurrence in the face, where peculiar muscular conditions prevail. (3) Its common arrangement in elongated plaques, whose long axis is parallel to the course of the orbicularis fibers. (4) Its heredity. (5) Its usual development after middle age when degenerative processes are apt to occur. (7) The histologic features of the affection.

Treatment of Pruritus. Du Castel (*Gaz. Médic. de Strasbourg*, No. 6, reported in *Thérapeut. Rev. der Allg. Wr. Med. Ztg.*) advises in the treatment of pruritus the internal use of lactic acid in doses of 6 to 20 drops at the beginning of meals. Several cases of eczema with persistent itching responded nicely to this treatment, as did also 3 cases of prurigo of Hebra. The treatment had no effect upon 2 cases of dermatitis herpetiformis nor upon a case of chronic urticaria.

Treatment of Furuncles with Salicylic Acid. Philippson (*Semaine Méd.*, No. 23, reported in *Thérapeut. Rev. der Allg. Wr. Med. Ztg.*) employs upon large furuncles a 50% salicylic acid plaster which is changed several times a day in order to permit a cleansing away of the accumulations of pus. For this purpose a cotton tampon, moistened with alcohol and ether, is used. The softening of the furuncle progresses rapidly, and after twenty-four hours a necrotic core is usually thrown off. The same plaster promotes formation of granulations and rapid cicatrization. In facial furuncles Philippson advises central boring with the tip of a thermo-cautery, followed by the application of salicylic acid powder, and this in turn by the plaster. To abort small furuncles the author advises moistening with a 2% alcoholic solution of salicylic acid 3 times a day. To prevent the formation of new furuncles, the patient is to bathe each day and then rub into the skin a 2.5% salicylic acid ointment.

PEDIATRICS.

UNDER THE CHARGE OF

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Some Details in the Treatment of Acute Intussusception in Infants. Collier (*The Lancet*, Aug. 26, 1899) believes that the reason for the high mortality in this affection is found in the fact that the true nature of the cases is not recognized early. He first deals with the method of treatment by *rectal injection, either with air or with water*. He says: "My experience with rectal injection alone has been very disheartening." The figures of Wiggin are then quoted, who found that, in 72 cases so treated, there were 54 failures and a mortality of 75%. The treatment by *abdominal section* is then dealt with. The writer believes in a small incision with but little exposure and handling of the gut. "The method of reduction through a small incision should not have a greater mortality than the operation for strangulated hernia in children of the same age." Collier prefers, however, a treatment by the combined method; and describes this method in the following manner: "The child being placed under chloroform, Mr. Skevington, the house surgeon, injected water by the rectum, with an irrigator raised to the height of 18 inches above the abdomen. During the injection the tumor could be felt to descend beneath the right rectus muscle. After keeping up the pressure for several minutes, the irrigator was lowered and I made a longitudinal cut over the remainder of the intussusception, which could be clearly felt in the right iliac region, the cut being just large enough to admit the index finger. The finger being introduced, the irrigator was again raised, and I was able to squeeze out, by gentle manipulation, the small remaining part of the intussusception, which to touch appeared irregularly bossed. The operation lasted but a short time and there was little shock. The child recovered." Two other cases are reported, both of which terminated favorably.

Club Foot and its Surgical Treatment. Huntley (*Int. Jour. of Surg.*, Sept., 1899) believes that "all of these deformities, from infancy up to adult life, can be corrected in a manner that is comfortable, profitable and comely." He states, however, that there will be failures under any mode of treatment, unless the surgeon will study each individual case and select the method best adapted for it. He believed that all cases of congenital club foot in patients under 3 months old can be corrected by manipulation and plaster of Paris without the use of the knife. When the patient is seen at a later age, the following rules obtain:

"Never use a knife on a case that can by manipulation be brought into a state of correction and maintained there without causing great distress to the patient."

"Operate as soon as possible, but remember that maturity is no obstacle to a successful operation."

"Cut the tendo-Achillis first, always subcutaneously, and master the equinus portion of the deformity."

"Do the rest of the operation subcutaneously, if a state of super-correction can be obtained thereby. If not, make a division of the soft parts. . . . If this should fail after great force has been applied, do osteotomy as a last resort."

The preparation for and the steps of the operation are clearly described, and the post-operative treatment with plaster casts is forcefully dwelt upon. Histories of successful cases are given, and photographs of patients and of a wrench of the author's device furnish good illustrations.

Congenital Idiopathic Dilatation of the Colon. Griffith (*Amer. Jour. of the Med. Sci.*, Sept., 1899) reports a case of this rare though interesting affection, and gives a careful summary of the literature. He first excludes the acquired cases from this study (those resulting from habitual constipation, from narrowing of the bowel, such as may be produced by external pressure, from acquired atony of the bowel, etc.); and then similarly dismisses those which have resulted from congenital stenosis of some part of the lower bowel. The author uses the term *idiopathic* to "designate an innate tendency to dilatation which is not dependent upon discoverable organic cause." The term *congenital* includes not only the dilated colon at birth, but also the existence of an early tendency toward dilatation. He confesses that it is sometimes difficult to draw the line between these true congenital idiopathic cases, and those already excluded from the discussion. The author gives a careful synopsis of 24 cases, including his own. *Symptoms.*—In most of the patients, constipation appears soon after birth, and abdominal distension soon follows in its wake; or else these two symptoms appear simultaneously. In most instances, enemata have succeeded in markedly reducing the size of the abdomen. The distension was always tympanitic, and frequently the distended colon could be outlined through the abdominal walls. There was in most cases a decided tendency toward exacerbations, in which both constipation and distension became more marked. Curiously enough, the stools are seldom scybalous, but are usually liquid. Failure of the general health ensues later, and dyspnea may result from pressure. Twenty of these patients were males. *Prognosis.*—While not absolutely bad, it is most unfavorable. *Diagnosis.*—This can readily be made from the above recorded symptoms. Eighteen autopsies and one laparotomy have served to exhibit a remarkable uniformity of lesions. Usually the colon with the sigmoid flexure is enormously dilated. More seldom the distension is confined to a more or less restricted portion of the bowel. The *treatment* is (1) hygienic and (2) operative. The former includes improvement of the general health, massage, electricity, and purgatives or enemata. The use of the rectal tube will often prove efficient in

relieving the gaseous distension. Operative procedures include the formation of an artificial anus (Halstead in Osler's patient, and Ashhurst in Griffith's) and the more severe measure of Treves, viz., the removal of the distended gut, and the joining of the small intestine with the anus.

THERAPEUTICS.

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Chrysarobin a Specific for Warts. Fitz (*Boston Med. and Surg. Jour.*, Vol. CXL., No. 26) calls attention to the difference between corns and warts, explaining their structure, and has used this drug in a series of cases, without failure. He makes a daily application of a 10% solution of the drug in either gutta-percha or ether, the surface to be sand-papered each day to remove the keratinized portion of the skin. Little effect is noticed the first week, but it usually cures in about 21 days.

Importance of Salicylic Acid Over the Salicylates in the Treatment of Acute Articular Rheumatism. Ellis (*Med. Times*, June, 1899) describes one case which was promptly relieved when he changed from the salt to the acid. Care has to be used not to sicken the patient, especially when large doses are used. In stubborn cases he has pushed it up to 10 grs. every hour, for 6 consecutive hours, with good result. However, the salts are retained better than the acid, and when used he prefers the combination with ammonia to that with soda.

Quinin in Malaria. Flackler (*Jour. A. M. A.*, July 29, 1899) has not had brilliant results in cases of malaria, in which he administered quinin hypodermically, and reports a series of 3 classes: 3 cases in the first, where hypodermic injections of 15 grs. of quinin bisulphate, twice daily, controlled the paroxysm, and gradually diminished doses, for a week, prevented return; second class, 7 cases, where 20 - 30 grs., usually given morning and evening, controlled the paroxysm; third class, 10 cases treated ineffectually

by hypodermic medication, while they were effectually cured when the drug was administered by the mouth.

Treatment of Eclampsia. DeLee (*Obstetrics*, Vol. I., No. 8) believes that morphia in $\frac{1}{4}$ gr. hypodermic doses, given every 15 minutes, until $\frac{3}{4}$ gr. have been administered, when given in conjunction with 45 grs. of chloral by the bowel, is of more value than is usually estimated. He has not found that bleeding is of great value, except in sthenic cases, and considers the administration of such drugs as strychnin, nitro-glycerin, and camphorated oil of more use. In cases where there is time to stimulate elimination every eliminative organ should be pushed, but usually they do not respond with the necessary acceleration. Rapid delivery (30 minutes) he does not believe should be practiced, as the after-effects caused by lacerations, producing hemorrhage and endangering sepsis, involve too much risk, although delivery should be as rapid as possible. The method of using Barne's bags has proved more satisfactory to him. *Veratrum viride* has not proved to be a specific with the author.

A Few of the Clinical Uses of Liquid Air. Pearce (*Cincin. Lancet-Clinic.*, Aug. 19, 1899). As a local anesthetic it has been most satisfactory, minor operations being done with no pain at all, and no injury to surrounding tissues. In neuralgias, and pain of herpes zoster, it has given prompt relief. A case of erythematous lupus, in which it was used, healed nicely, without the deep searing attended by other forms of treatment. A case of epithelioma of the face yielded easily. In cases of small tumors of the face, navi, etc., it can be used, and leaves a scar which is hardly perceptible. Cases of boils, carbuncles and bubos show marked modification in their course. A case of facial erysipelas was subjected to the spray until the infected surface felt very cold, and 3 days later the patient returned, having had no other treatment and the inflammation had completely subsided. Sluggish ulcers seem to take on a new growth when they have been subjected to the spray of liquid air, which appears to have all the effects of a caustic, without its attendant inflammation.

A Case of Poisoning with Seeds of the *Datura Stramonium*. Thane (*Australasian Med. Gaz.*, Feb. 20, 1899) reports a case of a girl, five years old, eating the seeds of this plant and being found a half hour later (4:30 P.M.) in a comatose condition. The mother gave salt as an emetic, and castor oil, both being retained; during a ride of 30 miles the child vomited a dark-colored material with some seeds in it, which the mother thought was due to eating blackberries. A few hours later the author observed the following symptoms: Pupils only moderately dilated; no conjunctival reflex; skin was red, but not enough to attract attention; temperature, 106.6° ; pulse, 150, full and bounding; breathing, 60 per minute; abdomen full and hard; about every 5 minutes were tonic spasms. Three hours later the pupil became dilated, face less flushed, temperature dropped to $104\frac{4}{10}^{\circ}$ and an hour later to $102\frac{4}{10}^{\circ}$. A few hours afterwards the child

died (8:30 A. M.), evidently of asphyxia, face being dusky toward the end. *Post-mortem* was negative. He also reports two other cases occurring in a nearby town. The symptoms in the first case were: Temperature, 103-104°; coma, tonic spasms, delirium at times, dilated pupils. Death in 15 hours. While the second recovered, the symptoms were more typical, delirium, dilated pupil, dry skin, lips and tongue, fast pulse, no temperature. Treatment consisted of emetics, followed by morphin.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Production of Scarlatina by Inoculation. Stickler (*Med. Rec.*, Sept. 9, 1899) in an effort to develop a protective inoculation added $\frac{1}{600}$ part of carbolic acid to the secretion of the mouth and throat from a patient suffering with mild scarlatina and injected this secretion into the skin of 10 children. In each instance genuine scarlet fever resulted. The following were the conclusions: (1) The mucus of the throat and mouth has been shown with absolute certainty to contain the contagium of the disease. (2) The early eruptive stage of scarlatina is exceedingly infectious, because of the presence in the discharges from the mouth and throat of the special poison of the disease. (3) The contagium of the disease being in the mouth and throat secretions, care should be taken not only to disinfect these parts as perfectly as possible, but to keep the tongue, mouth, and lips moist constantly, if possible, in order to prevent the contagious principle being forced into the air of the room by the exhalations of the patient. (4) Mouth and nose wipes should be used instead of spit-cups and costly handkerchiefs, and they should be destroyed by fire before the discharges on them dry, *i. e.*, at once. If fire be not available, disinfecting solutions should be used strong enough to render the poison inert. (5) The soiling of the bed-clothing and personal apparel with mouth discharges should be prevented if possible. In the event of such contamination, they should be disinfected as soon as possible. (6) No toys or implements of any sort that cannot be boiled or subjected to the strongest germicidal solutions should be given the patient, as they are apt to become soiled by the mouth secretions. (7) Those who minister at the bed-side should be especially careful as to personal contamination and disinfection from the moment they enter the room. (8) The nostrils should be taken thorough care of, as the morbid matter which

finds its way into these parts will, in the dry state, easily find its way into the atmosphere of the room, thus making the spread of the disease more probable.”

W. B.

A New Method of Preparing Anatomical Specimens. Mednikow-Rasvëdenkow (*Vratch.*, Vol. XX., No. 21) described before a meeting of Russian physicians in Kasan the new Moscan method, which is as follows: (1) Preliminary treatment of the fresh specimens with formalin; (2) subsequent treatment with 50-70-95 % alcohol; (3) final immersion in a solution of 20 parts of glycerin, 15 parts acetate of potash or soda, and 100 parts of water. The formalin may be used either in the form of vapor or watery solutions. In using the dry method, the specimen is placed in a closed vessel on cotton saturated with a 40 % solution of formalin; in the moist method a 10 % solution of formalin (40%) is used, to which is added 3 parts of acetate of potash and 0.5 parts of chlorate of potash. This method is very useful in preparing specimens for microscopic examination. Either the dry or the moist method may be employed. In the first the tissues are subjected to the vapors of formalin for 24 hours and then transferred into 95 % alcohol for 2-3 days, and finally preserved in the glycerin-acetate solution; in the second the tissues are kept for 24-48 hours in the solution of formalin, acetate of potash or soda and chlorate of potash. To preserve the color of the specimen, it is well to envelop it in some hygroscopic material, saturated with the glycerin-acetate solution, and place it in an air-tight vessel containing a little of the solution and a few crystals of thymol. The specimen is thus entirely excluded from light. This method recommends itself as one not inferior to that of Marini, which, however, is kept secret. A. R.

Experiments with Diphtheria-Antitoxin Introduced by the Mouth and Rectum for Curative Purposes. Nedrigajlow (*Bolnitsk. Gaz. Botkina*, Vol. X., No. 2) endeavored to establish experimentally how far the views entertained by some of the curative effects of antitoxin when introduced by the mouth or rectum can be substantiated. Accordingly, the author experimented on some 40 animals with antitoxin of various strengths and under diverse conditions of the gastro-intestinal tract, and obtained uniformly negative results. All the animals which received the antitoxin died as well as the control animals. Similar results were obtained when the blood-clot or internal organs of highly immunized animals were fed to those experimented upon. The latter observation contradicts that of Perini, who has obtained positive results in similar experiments. The author, therefore, comes to the conclusion that diphtheria-antitoxin is not absorbed unchanged by the blood from the gastro-intestinal tract, even when administered in very large doses, and in consequence no immunity whatever is conferred. This method, then, is not suitable in the treatment of diphtheria in men. As to the ultimate fate of the antitoxin when thus introduced the author promises to communicate his observations on that point. For the present, however, he states that his experiments so far warrant his conclusion that it is not destroyed by gastric, intestinal or pancreatic juices, by the bile or feces.

A. R.

CLIMATOLOGY AND HYGIENE.

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Sending Tuberculous Patients to Distant Resorts. Dr. R. C. Newton (*Trans. Amer. Climat. Assoc.*, 1899) says: "In connection with this subject of sending our patients away to various places, where they may get the benefit of the altitude, we should not lose sight of the question of proper food to suit an impaired or feeble digestion. I have seen men out on the frontier who could eat almost anything and thrive on it; but when we are dealing with patients who suffer from the indigestion so common in pulmonary tuberculosis, they had better be kept at home, unless we are convinced that they can obtain proper food elsewhere, because we cannot fight tuberculosis with poor food. The digestion should always be kept well in sight—much more so than it usually is. A cheerful disposition and good digestion will help a man to recover from pulmonary tuberculosis, at home or elsewhere, while a man who is easily discouraged and who suffers from poor digestion will be handicapped in the best of climates."

Climate in the Treatment of Tuberculosis. Dr. N. S. Davis, Jr., of Chicago (*Trans. Amer. Climat. Assoc.*, 1899), said: "I wish to express my personal conviction that climate has very much to do with the promptness and efficiency of the outdoor treatment of tuberculous patients. During the last few years the pendulum of opinion has been swinging toward the view that tuberculous patients can be treated in almost any climate, providing they can be kept out of doors more or less continuously. It is true that efficient treatment may prove successful in any climate. For example, in the early days of Chicago, when it was still a frontier town, patients were sent there from the East and many cures of consumption were effected. It is true that tuberculosis may be practically cured in any climate, but it is also true that there are certain climates where a cure is much more likely to be effected than elsewhere. Colorado and similar localities undoubtedly afford the best climate for the treatment of tuberculosis."

The Disinfection of Railway Coaches and Street Cars Operating in Ohio. Warner (*The Virginia Med. Semi-Monthly*, June, 1899) calls attention to the advisability of disinfection of public conveyances in view of the fact that they may be the direct carriers of such transmissible

diseases as tuberculosis, diphtheria, scarlet fever, whooping cough, etc. He believes that the railway companies would be willing to stand the expense if the subject were properly presented to them. The most practical disinfecting agent is formaldehyd, and some experiments instituted by him under very unfavorable circumstances, although not quite conclusive, nevertheless led him to the opinion that by means of that substance disinfection could be successfully carried out.

The Utility of a Mountainous Climate in the Treatment of Pulmonary Tuberculosis. Egger (*Zeitschr. f. diätetisch. u. Physikal. Therapie*, Vol. III.; *Vratch.*, Vol. XX., No. 29) establishes the indications and contraindications to the use of elevated regions in the treatment of tuberculosis. Indications: (1) Hereditary predisposition, weak constitution, tuberculous habitus, diseases which predispose to tuberculosis (measles, whooping cough, etc.). (2) Unrecognized tuberculosis, usually treated as anemia. (3) Incipient tuberculosis (catarrh of the apices). (4) Infiltration of the apices without breaking down of the lung tissue. (5) Beginning of the breaking down process before cavities are formed and t^o is elevated. (6) Pleuritic effusions which are not purulent but show no tendency to absorption. Contraindications: (1) Rapid progress of the disease. (2) Far advanced cases, when cavities have formed and are accompanied by a debilitating fever and extreme emaciation. (3) Wide-spread consolidation of either one entire lung or considerable portion of both. (4) Complication of tuberculosis by considerable emphysema or catarrh. (5) Marked affection of the larynx. (6) Albuminous urine as a result of chronic inflammation, amyloid degeneration or tuberculosis of the kidneys. (7) Uncompensated heart lesions, fatty degeneration of the heart, or atheroma. (8) Tuberculosis of the intestines or peritoneum. (9) Mental diseases.

The Relative Death-rates from Cancer and Consumption. Pryor (*Med. News*, 1899) sounds a timely note of warning against the indiscriminate use of statistics to support various theories and prophecies relative to cancer. The opinion that the latter disease is rapidly increasing, and will in a few years destroy more human lives than "consumption, small-pox and typhoid fever combined" is gaining ground among the profession, and vital statistics are adduced in support of these assertions. The author justly points out that the conclusions drawn from these data are erroneous. Cancer, it is true, is increasing, but not in such a ratio as to make the outlook so alarming. Practically every case of cancer is reported, because almost invariably fatal. On the other hand, many consumptives leave the state for other climates and the deaths are unrecorded here in the East. A certain unknown percentage recover and at least 25 % of autopsies reveal evidences of tuberculosis not fatal or healed. The difficulties in securing sick, industrial and life insurance and efforts to protect the family are at times giving rise to evasion and false returns. Moreover, contrary to the general belief, consumption is not decreasing *per se*. Deaths from all infectious

diseases have markedly decreased for the last 10 years, and consumption simply shares in this general decrease, preserving, however, its former ratio. This is largely due to the fact that while so much is known about consumption so little is done for its prevention and cure. A percentage, varying from 60% to 75% of early cases, can be cured, and the remainder improved by proper treatment. Therefore an immense and unnecessary loss of life and an appalling and unnecessary amount of suffering prevails in the State of New York because stupid, antiquated, inhuman and wasteful methods of dealing with the consumptive continue. The author finally urges upon the State to make an effective crusade against consumption, and until that is done the present death-rate of that horrible disease will remain unchanged.

Increase of Death-rate from Cancer in New Zealand. (*Med. Rec.*, Apr. 29, 1899.) The increase of the death rate from cancer is attracting much attention, and many speculations are being made as to the cause or causes. Since 1881, the death rate from cancer has doubled; in 1881, it was 2.69 per 10,000 of population; in 1897, it was 5.50 per 10,000. The death rate for males and females was nearly equal, being 5.51 of males and 5.43 of females. This was for 1897, the latest statistics published. Some attribute this increase to greater accuracy of diagnosis, but this is very doubtful. What improvement has been made in the diagnosis of cancer since 1881? We had microscopes then, as we have now. I am rather inclined to attribute it to the mental depression which has attended the great losses incurred by all classes, owing to over-speculation in land and mines. The glowing hopes which induced tens of thousands to emigrate to this colony in the seventies have been disappointed, and very many find it harder to get a living here than in the old country.

Diphtheritic Paralysis in Cases Treated with Antitoxin. Woolacott (*Lancet*, Aug. 26, 1899) states that the influence of antitoxin on diphtheritic paralysis may be summarized as follows: Up to the present the percentage of paralysis has increased on the whole. There is some evidence that large doses—i.e., not less than 4,000 units—of antitoxin are more effective than small ones, both in preventing paralysis and in diminishing the mortality due to it. The earlier antitoxin is given in diphtheria the less likely is paralysis to follow. Should it occur after early injection, it will probably be mild and of comparatively short duration. The type of paralysis has, on the whole, become less severe, or, at all events, less dangerous to life. Finally, diphtheritic paralysis has become more prone to attack the young. This change in age incidence has possibly made some minor differences in the relative frequency with which the various forms of paralysis are observed. The practical conclusion is that the full value of antitoxin is only obtained by using it early and in efficient doses. If this be done not only is life saved but tedious complications are prevented or at least deprived of their dangerous characters.

SURGERY.

UNDER THE CHARGE OF

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The Imperfection in Hand Disinfection. Gottstein and Blumberg (*Corres. Med. Press*) have recorded the results from hand disinfection in Mickulicz's Klinik. With Furbinger's method of hand cleansing (3 minutes' scrubbing in hot soap and water, 1-2 minutes' scrubbing in 6% alcohol, and a final scrubbing in 1-1,000 solution of mercuric bichlorid) bacteria were found upon the hands in 61.3 % of the cases and the practical results were glaringly imperfect. By lengthening the period for scrubbing and increasing the strength of the alcohol to 70 %, the percentage of germ-infected hands was finally reduced to 29 %, the staphylococcus albus being the most difficult organism to remove. The danger of wound infection from the hands, even after prolonged scrubbing, leads the author to commend the use of sterile gloves during operations.

Arterial Contraction and Obliteration a Chief Cause of the Muscular Atrophy Connected with Tuberculous Joint Disease. Miller (*Scot. Med. and Surg. Jour.*, Sept., 1899) believes that tuberculosis of the joints induces a reflex contraction of the adjacent arteries, which, if continued, may be followed by thickening of the middle coat of the arteries and finally by arteritis obliterans. Clinical and pathological study have added confirmation to this theory of the cause of the disproportionate and often permanent atrophy accompanying this affection. Practically, the theory places additional argument in favor of Bier's congestion method of treatment, or of measures to insure an early eradication of the tuberculous focus.

The Operative Treatment of Palmar Abscess. Brooks (*Bost. Med. and Surg. Jour.*, Aug. 10, 1899) finds the customary short incision over the metacarpal bones inefficient and liable to impair the future flexibility of the palm. He therefore, by incisions following the natural folds of the palm, lays back an extensive palmar flap, cures pus pockets and inserts gauze wrung out of hot bichlorid solution (1-5,000). Each day the antiseptic dressing is removed and renewed, a hot antiseptic bath for an hour or so being employed. When the surfaces are covered with healthy granulations the skin flaps are replaced and a dry dressing applied. The incision employed commences at the ulnar end of the transverse furrows, extends nearly its entire length, when it is brought to the furrow winding around the thumb and ear-

ried along this to the wrist. The skin flaps are dissected up, exposing the palmar bursa.

Nephrectomy and the Desirability of the Earlier Diagnosis of the Conditions Requiring it. Noble (*Penna. Med. Jour.*, Aug., 1899) gives the history of 9 consecutive and successful nephrectomies in most of which the operative danger was markedly increased by the failure to early diagnose the renal lesion. In 5 of the cases the kidneys were extensively disorganized from tuberculosis. All of these patients were improved, 2 having apparently completely recovered their health. Of the remaining 4 operations, 2 were performed upon kidneys disorganized from the presence of renal calculi, a third was for a renal carcinoma, while the fourth relieved a post-operative ureteral fistula. The advantages of an early operation in nearly every case were so apparent that the author strongly urges the early and more exact study of all cases of pyuria and hematuria and the more general adoption of the comparatively safe renal exploration by the lumbar incision.

Complications and Sequelae Resulting from Appendiceal Pus. Deaver (*Jour. Amer. Med. Assoc.*, July 22, 1899) believes that appendicitis with pus formation produces ravages more disastrous than any other affection occurring within the abdominal cavity. The complications and sequelae noted include septic and croupous pneumonia, nephritis, hepatic abscess, endocarditis thrombo-phlebitis of the mesenteric veins, purulent pericarditis, pleuritis, peritonitis and the various varieties of intestinal fistula. Attention is directed to appendicitis as a cause of purulent pelvic inflammations. The lesions are usually most serious when the appendix points toward the spleen, least when it points toward the right side or lies beneath the ascending colon, while the pain is often in the left side when it points into the pelvis. The frequency of these formidable results of appendiceal pus strongly emphasizes the importance of early operation and the error of delaying for the so-called favorable interval.

The Effect of the Entrance of Air into the Veins. In a recent editorial (*Ther. Gaz.*, Sept., 1899) reference is again made to the over-estimated dangers from the entrance of air into the veins. Not only has the writer seen air accidentally enter the veins during life without evil effects ensuing, but Sternberg (*Centralblatt für Chirurg.*, 11, 1899) has recorded two cases in which air entered the veins during operations for thyroid tumors, in quantities sufficient to induce marked symptoms, and yet both patients recovered from the operation; one, however, dying 15 days later from pneumonia. In the first case, following the tearing of the external jugular vein, a loud wheezing was heard and a very loud gurgle accompanied each heart sound. The respirations became superficial and the pulse slow, yet the patient soon recovered. In the second case there were symptoms of syncope, and a rhythmical sucking sound and a gurgling loud enough to be heard by the bystanders was present. Recovery ensued under vigorous restorative treatment. The presence of air in the heart *post-mortem* is probably often due to the activities of gas-forming bacteria.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Treatment of Affections of the Sphenoidal Sinus (Zur Behandlung der Keilbeinhohlenerkrankungen). Cordes (*Monats. f. Ohrenheilk.*, No. 5, 1899) states that chronic affections are very frequent, and may be consequent upon an acute sinusitis or may follow a chronic condition in the nose or pharynx, ozena in particular. The subjective symptoms present nothing in particular—headache, localized perhaps in the occiput or in the crown of the head, or perhaps in the supraorbital region, subjective odors. Objective symptoms—crusts of a greenish-yellow color beneath the middle turbinate, caseous pus in the posterior part of the nose festooned along the septum, the choanal border or along the sides of the pharynx giving rise to a dry or atrophic pharyngitis. The diagnosis cannot be made with certainty before the cavity is explored—a procedure which is not always easy. The orifice of the sinus has a variety of location, it may be great or small, the nasal fossa may be contracted to such an extent as not to allow the passage of a probe. Sometimes the sinus is absent, or is ill developed; at other times it presents an over-development. In some cases the inferior wall extends so far forward that it is confused with the anterior wall, and the latter might be perforated when attempting to pierce the former. It is necessary, then, before operation to make an exact exploration of the sinus, and especially of its anterior wall. For this purpose the author practices, by means of a special instrument, fracture and lateral luxation of the middle turbinate. The operation, under cocain, is slightly painful and hemorrhage small. Once access is obtained so freely, apart from anomaly, the natural orifice of the sinus can be found with the sound and the dimensions of the cavity explored. For enlarging the orifice and lifting up the anterior wall of the sinus, the author inserts an instrument which is composed of two gouges sliding one over the other, fixed in a handle. This is introduced into the orifice and by rotating them gradually it is enlarged. The same instrument is employed to create an orifice where none existed. The operation under cocain is not very painful and the subsequent treatment consists in irrigation and insufflation of powder.—(Abstracted by Jankelevitch, in *Rev. Hebdom.*, etc., No. 30, 1899.)

Sarcoma of the Larynx with a Long Pedicle (Langgestieltes Sarcôm des Kehlkopfes). Ephraim (*Monats. f. Ohrenheilk.*, No. 5) reports a patient who had for some weeks difficulty during respiration and deglutition on the right side of the throat. Examination disclosed an in-

tense reddening and swelling of the right arytenoid region and a bluish tumor the size of a pea at the bottom of the pyriform sinus. The tumor could be elevated with forceps, and proved to be inserted in the pyriform sinus by a long, narrow pedicle. It proved to be a sarcoma of small round cells surrounded by a thin, fibrous capsule. The pedicle was composed of loose connective tissue and in the superior parts some round cells. The patient was lost to view.—(Abstracted by Jankelevitch, in *Rev. Hebdom. de Laryngol.*, etc., No. 33, 1899.)

Membranous Tracheitis (Ueber Tracheitis Membranacea)
G. Kuhn (*These de Zurich*, 1898) cites two cases of this affection, one consequent upon typhoid fever and the other following pneumonia. In one case the diagnosis of acute laryngitis was made and in the other that of acute edema of the larynx. In the case following pneumonia the membrane of the trachea was composed of fibrin and leucocytes just as the exudate in the lung. In the case consecutive upon typhoid fever the membranes were only in part composed of fibrin. They contained a substance refractory to the coloration of Weigert, that is to say, for mucin. The fibrin formed nodular spots which extended in prolongations in every direction, and between these projections the mucin was deposited. It was difficult to trace a line of demarcation between the spots of fibrin and mucus. During the course of the process one might find the fibrin exclusively; at other times it was absent entirely. When the process was mild and without severe irritation, the membrane would be composed principally of mucin. If the condition were intense, of a nature clearly inflammatory, with at times periods of inflammation, the fibrin could be found mixed in with the mucin.—(Abstracted by Jankelevitch, in *Rev. Hebdom. de Laryngol., Rhinol. et Otol.*, No. 30, 1899.)

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Resection of the Superior Cervical Ganglion in Glaucoma.
Jonnesco (*Wien. klin. Wochenschr.*, May 4, 1899) reports 8 operations in several varieties of glaucoma, viz., 1 case of acute glaucoma, 3 cases of absolute chronic irritative glaucoma, and 3 cases of chronic simple glaucoma.

The results of operation were: (a) Lasting reduction of intraocular tension in all cases; (b) energetic or noticeable contraction of the pupil, which was permanent and occurred as well in the cases in which iridectomy had been performed; (c) disappearance of periorbital pain; (d) disappearance of attacks of irritative glaucoma; (e) improvement of vision in those cases in which visual acuity was not entirely gone.

The explanation of the beneficial effects of this operation is as follows: The excision of the superior cervical sympathetic ganglion destroys the vaso-

constrictor fibers of the eye, relaxing the arteries, lowering blood-pressure and reducing extravasation; it destroys the fibers which dilate the pupil, hence there is strong pupillary contraction, opening the iris-angle and excretory channels at the periphery of the anterior chamber; it destroys the excito-secretory fibers, and hence inhibits secretion; and it causes relaxation of the unstriated peribulbar muscle, removing excessive pressure upon the ocular veins.

The operation is indicated especially in the non-inflammatory types of glaucoma in which the nervous disturbances are predominant. On the contrary, iridectomy offers the best results in the inflammatory types, and is of less value in chronic irritative glaucoma without prodromes and in simple chronic glaucoma. Hence, resection of the cervical sympathetic is of value in just the cases that iridectomy affords little relief. We need not expect excision of the superior cervical ganglion to influence an established inflammation or restore an atrophic papilla, but even in such cases pain is relieved and tension lowered, and it is these distressing symptoms that often demand enucleation. Unless the eyeball is very unsightly and infected, sympathectomy is preferable to enucleation.

The after symptoms are congestion of the conjunctiva, globe, and nose. There is profuse lachrymation and nasal secretion, and heaviness of the head. These disappear on the first day. The pupil becomes contracted, the eyeball recedes in the orbit, the upper eyelid droops, and palpebral fissure becomes narrowed. There may be slight dysphagia and pain during mastication at the cranio-mandibular articulation, which, however, soon disappear.

The therapeutic results already mentioned are an immediate reduction of intraocular tension, disappearance of periorbital pain and headache; and, in cases in which the papilla is not entirely destroyed, an improvement in visual acuity and field of vision, which often increases noticeably from day to day.

The technic of the pre-mastoid operation is as follows: (1) A cutaneous incision is made from the upper angle of the inferior maxilla, extending several inches along the anterior border of the sterno-mastoid. (2) The anterior border of the muscle is freed, and the muscle is drawn outward and backward by a retractor; the deep layer of the aponeurotic sheath is cut by a grooved director, and a second retractor is used on the inner lip of the wound to draw the larynx inward. (3) There is now exposed a bundle of vessels and nerves. The anterior wall of the vascular bundle is cut, and the internal jugular vein is drawn outward by a retractor and the carotid artery and pneumogastric nerve are drawn inward. The carotid sheath and prevertebral fascia are carefully opened. The superior cervical ganglion is brought to view, seized with the forceps, and is dissected from below upward, and all afferent and efferent fibers cut by blunt curved scissors. The ganglion is then torn out with the fingers, and a final cut is made below. (4) The border of the sterno-mastoid is united to the deep tissues by means of three or four cat-gut sutures. The superficial incision is closed by fine cat-gut sutures, without leaving a drain *in situ*. The operation may be performed in from 10 to 15 minutes, it is almost bloodless, and it permits the fibers of the superior cervical plexus and the external branch of the

spinal accessory nerve to remain intact. Under antiseptic precautions the bad results are trifling and the bandage may be removed in 6 days.

Ball, of St. Louis (*N. Y. Med. Jour.*, July 1, 1899), has operated twice with success. In one case of absolute glaucoma with pain, there was immediate relief of suffering, and tension steadily decreased. In the second case, one of chronic simple glaucoma, besides the relief from pain and diminution of intraocular tension, vision had increased in 3 weeks from mere light perception to counting of fingers at 7 feet.

Ball employed the posterior operation, which in his first case he describes as follows: On May 15, 1899, the patient was anesthetized, chloroform being employed. An incision 4 inches in length was made on the right side downward from the mastoid process, extending along the posterior border of the sterno-cleido-mastoid muscle. The external jugular vein was cut and tied. The sterno-cleido-mastoid was then separated from the trapezius muscle and the spinal accessory nerve was cut. A deep dissection was then made, exposing the carotid sheath. This was opened to locate the pneumogastric nerve beyond question. The carotid, internal juglar, and pneumogastric nerve were then pulled forward, bringing into view the rectus capitis anticus major muscle, on which the superior cervical ganglion rests. Tearing through the fascia, the ganglion was found and stripped. The ganglion was then cut high up with curved scissors and all its branches severed. About one inch of the trunk of the sympathetic below the ganglion was removed. There was no change in the pulse or respiration. The wound was closed with interrupted sutures and the neck placed in a plaster cast. The time required for operation was 15 minutes. Immediately after the operation the right eye was suffused with tears, the right conjunctiva much injected, and the right nostril was moist. The intraocular tension was $+2$. The patient slept well all night, being free from pain for the first time in over two months. The temperature at 7:30 P.M. was 99.2° ; pulse, 80. The patient's temperature did not at any time exceed 99.8° , nor did her pulse exceed 90. Tension steadily decreased to $+1$. On May 16th slight ptosis was noticed on the right side. This symptom is still present. On May 19th the circumcorneal injection was much less; the conjunctival hyperemia and lachrimation were still present, while the ptosis was slightly increased, and tension was $+1$.

Albuminuric Retinitis. Samuel West (*Med. Press and Circ.*, Sept. 6, 1899) draws a sharp distinction between the two forms of albuminuric retinitis, the degenerative and the exudative. They stand in strong contrast with each other in the following respects: (1) *Of the form of disease with which they are usually associated:* the degenerative with granular kidney, the exudative especially with parenchymatous nephritis. (2) *Of their nature and cause:* the exudative being inflammatory and probably toxic in origin, the degenerative consequent on vascular changes and more or less mechanical in origin. (3) *Of sight:* for the exudative, even in the extreme forms, may recover, with little or no defect of sight, but with the degenerative, if there is any impairment of sight, it is usually progressive. (4) *Of diagnostic value:* the exudative being an interesting by-phenomenon of

chronic parenchymatous nephritis, an affection the existence of which is obvious enough, while in granular kidney the degenerative often makes the diagnosis certain in cases which have been hitherto obscure. (5) *Of risk to life*: for while in both cases it indicates a grave form of renal disease which may of itself prove fatal, in granular kidney it indicates in addition all those dangers to which arterial disease exposes the patient.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Cerebral and Meningeal Syphilis Treated by Intra-muscular Injections of Insoluble Salts of Mercury. Stinson. (*N. Y. Med. Jour.*, Sept. 2, 1899.) The case reported is one of tertiary syphilis, treated by injections of the salicylate of mercury, the dose employed being 2 grs., suspended in $\frac{1}{2}$ dr. of sterilized almond oil. The injection was made with a needle 2 inches long and introduced into the muscular tissue of the buttock. The author reports that one injection produced an immediate improvement in all the symptoms, the pains in the head and neck disappeared and inside of 4 days the soreness and tenderness of the skull had also gone. The injections were given every 4 days. After the ninth injection, the patient showing marked signs of salivation, this treatment was discontinued, and iodid of potash given internally. Attention is called in the article to the technique employed in giving intra-muscular injections of mercury.

The Treatment of Syphilis. (*N. Y. Med. Jour.*, Apr. 8, 1899.)

In discussing this subject, Bangs first calls attention to the fact that mercury acts as a specific by producing fatty degeneration of unstable and plastic effusions, the result of such fatty metamorphosis being taken up by the lymphatics, and passed out of the body through the various emunctory organs. Hence it follows that to be successful in the treatment of syphilis not only must mercury in some form be administered, but the patient's health must be maintained at the highest level in order to best promote a rapid elimination of the products of metabolism induced by the mercury. In other words, the patient is to be treated as well as the disease. The author is an advocate of excision of the primary sore where it can be done

without mutilation. Treatment is instituted at once without waiting for secondary symptoms. Mercury by the mouth, as much daily as the patient can digest, is advised. This is alternated from time to time with a course of inunctions of blue ointment. In certain malignant forms, where the tissues of the individual seem to be rapidly breaking down, hypodermic injections of bichlorid, in the region of the buttocks, are strongly advised. Treatment is kept up for a period of 3 years.

Vascular Supply of the Kidney. Zondek (*Berlin Med. Soc.*, June 28, 1899) says that certain facts in connection with the vascular supply are very important in conjunction with the surgery of this organ. The frequent existence of a second artery to one pole, he thinks, may explain why tuberculosis is so often limited in its distribution in this organ. This arrangement of arteries is also to be borne in mind in nephrectomy, as its neglect has given rise to serious hemorrhage. He advises in resecting portions of the substance of the kidney that the operator should excise a pyramidal piece, in order to avoid wounding the arteries which radiate from the hilus. In nephrotomy the incision should be made in the middle third of the lateral surface, parallel to the median line of the dorsum, one-third of an inch removed from it. The incision should be oblique with reference to the renal surface, the knife being slanted downward toward the hilum, so as to open into the pelvis as directly as possible. This incision gives the best chance to find a calculus when the pelvis is small, and avoids all large arterial branches, and thus diminishes the risk of hemorrhage and of subsequent colic, and economizes the renal tissue to the greatest possible extent.

T. M. T.

Movable Kidney. Halstead (*Medicine*, Sept., 1899) advocates fixation of the kidney in (1) all cases when, after a fair trial of the palliative measures, the symptoms still persist; (2) immediately in all cases where the occupation or habits of the individual preclude the possibility of benefit being derived from abdominal supports. In these cases no time should be lost in temporizing measures, but operative treatment should be resorted to in the beginning. He states that the most generally available means of uniting the kidneys to the abdominal wall are: (1) Union of the adipose capsule opened or unopened to the edges of the incision; (2) free exposure of the kidney by incision of the fibrous capsule, and suture of this capsule to the abdominal wound; (3) denudation of the kidney by stripping back the fibrous capsule along its convex border and fixation of the kidney by means of sutures passed through its parenchyma. To these may be added the method of Senn, in which he exposes the kidney, denudes its convex border, and then fixes it in place by strips of gauze passed around the kidney and brought out through the lumbar wound. He admits that the operation of nephrorrhaphy or nephropexy with the present methods of fixation of the kidney is not all that could be desired, although the results are far from being bad. It would appear that from the suggestion offered by Wolkow and Delitzin regarding the surgical treatment of this disorder efforts should be directed toward the restoration of the contour of the paravertebral fossae.

T. M. T.

OBSTETRICS.

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The Diagnosis of Eclampsia and the Diagnosis of Impending Eclampsia. Davis (*Amer. Gyn. and Obstet. Jour.*, XV., No. 1) states that the great majority of evidence assigns toxemia as the cause of this disease, and that the diagnosis of toxemia is made by studying the action of the excretory organs. The functions of the intestines and liver must be watched. The important factors in the examination of the urine are the quantity, specific gravity, the urea, the presence of albumin and the character of the sediment. If a close scrutiny shows that the excretory organs are deficient in their action, an interrogation of the nervous system will reveal symptoms of poisoning from retained toxins. Unless this condition is quickly relieved, eclamptic seizure will soon occur. [The urine should also be examined for indican and aromatic sulphates when there is danger of eclampsia. One or the other or both of these will be found present in excess in the urine when eclampsia is developing or impending.—ED.]

Rupture of the Fornix Vaginae During Labor. Poroschin (*Vratsch.*, No. 9) reports the following case: The patient was 33 years old, and a 7-para. The head had entered the pelvis and the vulva was beginning to distend when the patient complained of severe pain in the abdomen and became very pale. Labor pains ceased, and after an unsuccessful attempt at forceps extraction, the head was perforated and delivery accomplished with the cranioclast. The placenta was expressed and then loops of intestine and mesentery presented in the vagina. As the patient was greatly shocked the parts were tamponed until the third day, when the abdomen was opened, the prolapsed mesentery was removed and the utero-vaginal tear was sutured. The patient made a good recovery.

Sore Nipples and Mastitis. Rubeska (*Arch. für Gyn.*, Bd. LVIII.) states that he has observed sore nipples in 40 to 50 % of cases. The trouble usually appears on the fourth or fifth day following the labor. Prophylactic treatment should consist of daily washings with warm soap and water, followed by an application of 60 % alcohol and glycerin on alternate days. When nursing commences, soap suds and 60 % alcohol twice daily. The sore nipples are best treated with a 3 % boric acid wet dressing. In beginning mastitis energetic disinfection with 0.5 solution of bichlorid of mercury, drawing the milk, and ice applications are used. Should the mastitis commence with a chill and glandular infiltration, he advises parenchymatous injections of 3 % carbolic acid solution. The writer has never experienced trouble from this, using 2 or 3 syringefuls.

The Treatment of Fever Following Delivery, with Special Reference to Serum Therapy. Spencer (*Med. News*, Aug. 19, 1899) distinguishes 4 groups of fever following labor: (1) "One-day fever" due to emotion, etc.; (2) due to complications not referable to the labor, as influenza, scarlet fever, phthisis, typhoid, etc.; (3) due to infection from pre-existing pelvic lesions, as pyosalpinx and appendicitis; (4) due to external infection, "puerperal fever." Whitridge Williams and others have shown that puerperal fever may have its origin in a number of micro-organisms, as streptococci, staphylococci, colon bacilli, gonococci, anaerobic bacilli, diphtheria bacilli, gas bacilli, and typhoid bacilli. Spencer believes that it is not necessary for a medical man to abstain from practice when in attendance on such a case, as thorough disinfection will make it possible for him to attend other cases with safety. The conclusions reached by the author in regard to the value of serum-therapy are as follows: (1) That as usually applied serum-therapy in the treatment of puerperal fever has no scientific base; (2) that it has not lowered the mortality; (3) that it usually lowers the temperature and sometimes improves the general condition; (4) that its use is not free from danger.

Dilatation of the Ostium Vaginae as a Preventive of Ruptured Perineum. Macomber (*Med. Council*, Aug., 1899) uses the Champétier de Ribes bag for gradually dilating the vagina with a view of discounting the effect of the fetal head in producing laceration of the perineum. When the os was the size of half a dollar the bag was introduced and distended to its full limit. The patient's exercise was not interfered with. The head entering the pelvis presses on the bag and thus makes continuous dilatation of the perineum. With the expulsion of the bag, the head immediately followed without any laceration whatever. The presence of the bag in the vagina stimulates and strengthens the pains. Traction upon the bag dilates the inferior strait in advance of the head, which tends to reduce the amount of moulding and shortens the second stage. After the head enters the pelvis, its pressure on the bag maintains a state of constant distension of the perineum which paralyzes the contracting muscles.

Suggestion in Pregnancy and Labor. Ritter (*Med. Council*, Aug., 1899) states that suggestion is of great value in the vomiting of pregnancy. It is also of use in the other functional disorders of gestation. He states that it is possible to hypnotize the parturient woman so that she realizes none of the pains of delivery. He has recently discharged a case of confinement in which he was able to produce analgesia without loss of consciousness.

Massage of the Abdomen in Deficient Lacteal Secretion. Schien (*Jour. de Méd., Paris*, July 16, 1899) writes that massage of the abdomen will increase a deficient lacteal secretion. The treatments should consist of movements made upward from the pelvis to the breasts for half an hour daily, associated with massage of the breasts. The explanation of this result, as given by the author, is that the function of the mammary glands is intimately connected with the amount of blood brought to these glands from the genital organs through the blood vessels of the abdominal walls.

INTERNATIONAL MEDICAL MAGAZINE.

A Monthly Journal of Medical and Surgical Science.

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Edited by BOARDMAN REED, M.D.

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If we again take up the cudgels in favor of a more patient and persevering use of medical procedures before resorting to surgery in certain cases, it is by no means for want of a thorough appreciation of the brilliant and often life-saving work now being done by our best surgeons. Too much cannot be said by way of praise of the remarkable achievements of these men, both in this country and Europe. But it has been most aptly said that "the chief end of medicine is to obviate surgery."

**Phantom Tumors
and Their Treatment,
Medical
and Surgical.**

We do not do full justice to our patients when we resort to surgery before exhausting all reasonably hopeful medical measures, unless in the case of a person who is not in a position to command, for a sufficient length of time, the special or skilled medical treatment required.

In the August number of the *American Journal of the Medical Sciences*, Dr. R. H. Fitz, Professor of the Theory and Practice of Physic in the Harvard Medical School, Boston, discusses, in a very full and interesting fashion, the subject of "Phantom Tumors," which he holds to mean, most frequently, idiopathic dilatation of the colon. In this view he is doubtless correct with regard to a large proportion of them, though dilatation of the stomach and downward displacement of both stomach and intestines account for a considerable number, while strictures, kinks or twists in the bowels are also answerable for many cases of the kind. But Prof. Fitz has avowedly written this paper for the purpose of recommending in "suitable cases of these affections" resection of the sigmoid flexure—an operation which was brought forward recently by Treves for cases of dilatation of the colon which have resulted from congenital defects in the terminal part of the bowel—either a narrowing or other obstruction.

Fitz, in the paper referred to, does not state explicitly just what cases of idiopathic dilatation of the colon he would consider suitable for this operation, but the one reported by him as having been operated upon is said to have had a greatly enlarged sigmoid flexure, with some dilatation of the descending colon and rectum.

The illustrations given of the woman's abdomen, taken in connection with the statement that "the waist was small, the epigastrium flat, but below the navel the abdomen was uniformly swollen and tympanitic to a marked degree," would raise a very strong presumption that there existed, besides the dilatation of the large bowel, a marked prolapse of the stomach and small intestines. The author of the paper states that "there was no alteration in the outlines of the stomach . . . as determined by percussion," but, unfortunately, percussion alone, unless practiced after inflation of the viscus or before and after drinking a quantity of fluid with the patient in different positions, is rarely decisive as to the position and size of the stomach. Even the two laparotomies done on this woman—one to remove the appendix, which was adherent to the abdominal wall, and the other to resect the sigmoid flexure—might not have revealed an enteroptosis if done with the patient in the now usual Trendelenburg position, since in this position the displaced organs may slip back into their normal places.

Assuming, however, that Prof. Fitz employed expertly the most recent methods of examining the abdomen, and that enteroptosis can be excluded in the case which he describes, the report seems to have been written before convalescence was complete, so that the conclusions to be drawn from it, as to the value of such an operation in dilatation of the colon not dependent upon organic obstruction, must be very limited.

On the other hand, it does not appear that either in this, or in any of the other cases of so-called phantom tumor cited by the author from other observers, there had been any employment locally of massage and electricity (within the bowel or without), or even a thorough and persistent use of either hot or cold stimulating enemata, with sufficient antiseptics to prevent fermentation and gaseous distention of the gut. Experience shows that with such well-directed and energetic local treatment of dilatations both of the stomach and colon, contraction can often be accomplished and a cure thus effected, even without the valuable aid of our surgical friends. In many cases, however, this requires a long time, with treatments of an expensive kind, daily or tri-weekly, so that for the working class and poor patients generally, some such operative measure as that described by Dr. Fitz may be a real boon.

Dr Robin comes valiantly to the defence of antitoxin in the present issue of the *INTERNATIONAL* with a paper which completely answers various objections that have been urged against it as a means of treating diphtheria, leaving the objectors not a single leg to stand on. He lays the chief stress upon the invincible character of the evidence which comes from the laboratory, relegating the clinical testimony to second place. Without going into the question of the relative value of these two kinds of data, we desire merely to emphasize the

**The Treatment of
Diphtheria.**

fact, clearly demonstrated by Dr. Robin's paper, that fully and impartially marshalled the evidence of both kinds is overwhelmingly in favor of the new method. The clinical statistics arrayed by him, though not covering by any means all the published reports which are favorable to antitoxin, constitute a very strong showing. The fact that the mortality reports of certain isolated cities can be so manipulated as to bear apparently against the efficacy of antitoxin, while the majority of such figures throughout the world show very favorable results from it, ought not to weaken the faith of any one in the remedy.

The truth is, that the published statistics in general of the mortality from diphtheria under the antitoxin treatment, convincing as they must be to every unbiased mind, make a less favorable showing for the method than they should, for the reason that many of them are composed largely of hospital reports, and it is well known both that, on the one hand, cases sent to hospitals do not come under treatment early, and, on the other hand, that it is precisely in the first day or two of the disease that antitoxin is most effective. There is great unanimity of opinion among clinicians who have thoroughly tried the remedy, that it accomplishes brilliant results when given in the earliest stages, and that it is comparatively inefficacious when its administration is delayed until the third day or later, when the gravity of the affection has been greatly increased by streptococcic infection. It is probably owing to this that some physicians connected with hospitals to which large numbers of cases of diphtheria are sent, nearly always, of course, after having become fully developed, do not think highly of antitoxin, while it is rare to find a family physician who has made a full trial of the new method without having become an enthusiastic advocate of it. We recall having seen, within the past year, some statistics from Chicago showing the comparative effects of the treatment by antitoxin when instituted at different stages of the disease by physicians in private practice. In the large number of cases in which treatment was begun on the first day the mortality was almost *nil*; begun on the second, the mortality was greater, yet still remarkably small as compared with that under old methods; begun after the second day, the treatment proved less notably superior to those formerly in vogue.

In this connection it is interesting to read on another page the testimony of Dr. Coleman in favor of heroic doses of calomel for diphtheria. The late Dr. O'Dwyer, the accomplished inventor of intubation, and a high authority in the treatment of diphtheria in the pre-antitoxin days, was in his later years a firm advocate of mercury in large doses in this affection. Dr. L. D. Judd, of Philadelphia, whose paper on this subject Dr. Coleman confirms so strikingly, has found calomel an almost unfailing remedy in the same disease.

Why not use both antitoxin and calomel systemically in addition to energetic antiseptic local treatment, as is emphatically recommended by Prof. Kyle in his new work on the Nose and Throat, a review of which ap-

pears in this number of the INTERNATIONAL? We cannot be too much in earnest in combating such a dangerous malady.

We should expect to see our therapeutics constantly progress and improve. Every physician, putting aside prejudice entirely, should "prove all things, and hold fast to that which is good." Personally, we are among those who believe that the great science and art of medicine have in a sense just begun to be studied, and that the progress of the future in this direction will render the achievements of the past insignificant in comparison.

EDITORIAL MENTION.

PROF. E. E. MONTGOMERY presented to the Section on Obstetrics and Diseases of Women at the last meeting of the American Medical Association a scholarly paper entitled "Does the Removal of the Ovaries Exert Beneficial Influence on the Subsequent Progress of Malignant Diseases?" The paper is published in the *Journal of the Association* of September 23d, and is most cautious and conservative in its conclusions. Dr. Montgomery cites the reported experience of Beatson and others, showing apparently favorable results from oöphorectomy for the relief of mammary cancer, and examines critically the novel theory upon which Beatson explains the supposed influence of removing the ovaries in such cases. He refutes this theory as illogical, and doubts not only the possibility of effecting cures in this way, but also whether there is obtained "sufficient palliation and delay in the progress of the disease to compensate the patient for the discomfort of the additional operation."

DR. ALBERT C. BARNES, of Philadelphia, contributes to the *American Gynecological and Obstetrical Journal* for September the results of a collective inquiry into the relative efficacy and safety of glycerinized vaccine and the vaccine points which have so long been in almost universal use in this country. He reports that in Baltimore during a recent small-pox epidemic, over 100,000 tubes of the former were used with 95% of "takes" in primary cases. Not one of those vaccinated with these took small-pox. There was not more than 1% of excessively sore arms, instances of staphylococcic or streptococcic infection being very rare. In Porto Rico extensive vaccination has been practiced under Dr. George C. Groff, Brigade Surgeon, U. S. A., and there the glycerinized vaccine was successful in about 90%, while vaccine points failed entirely on account of the climate. The points have been a great convenience, but as often prepared are apt to infect the patient with more than the virus of cow-pox. If, therefore, the claims made in behalf of the glycerinized virus should be fully confirmed, it will prove a boon to the profession.

THE Delaware State Board of Health is showing a commendable degree of zeal and energy not surpassed by those of the larger states. It has begun the issue of a periodical bulletin, the September number of which is before us. It is full of practical suggestions and explicit detailed directions to physicians relative to the methods to be followed in sending to the Board specimens of sputum, samples of urine, etc., for testing. The Board is under the direction of Prof. F. D. Chester, with Dr. A. Robin, one of our collaborators, as Bacteriologist and Pathologist. They announce that most of the preservatives hitherto in use for preventing changes in urine while being kept or transported to the laboratory have been found to be objectionable, interfering with some of the more important tests. They recommend 2 or 3 drops of formalin or 10 to 15 drops of thymol to each four ounces of urine as the best antiseptics for this purpose.

The Diphtheria Bacillus in the Organs. (*Revue Gen. de Path. Int.*, Jan., 1899.) Some recent research establishes that the Löffler bacillus does not penetrate much beyond its entering point, and that it does not find its way into the blood and organs, except when it is associated with the staphylococcus or streptococcus. In this case, it is found in the blood and organs in abundance. These facts confirm Barbier's theory that the diphtheria bacillus does not find a ready foothold in man, and that it requires a soil prepared by some other infection. The importance, therefore, of keeping away from diphtheritic infection persons already affected by some other infection, becomes more and more evident by these later researches. When the streptococcus is associated with the diphtheria bacillus, the general condition is serious; there are apt to be cardiac accidents, very rapid and irregular pulses; the patient has diphtheria and also septicemia. The local treatment should be energetic and serum injected early and often.—*Laryngoscope*.

Treatment of Uremia by Water Diet. M. Renon (*Paris Corres. Med. Press*) says that there are cases of acute or chronic uremia where the patients cannot support the milk diet; the accidents persist, in spite of the milk, and perhaps even on account of the milk, which becomes a poison, as in cases of acute enterocolitis, and probably for the same reasons. In such cases, consequently, some other agent than milk should be employed. M. Mathieu has shown that in the course of chronic gastric uremia the patients could be treated simply with water, and he knew that M. Bar treated for the last year by the hydric diet, and with good results, women suffering from gravid albuminuria and from eclampsia. He thought, consequently, that in uremic patients who did not support the milk the hydric diet should be observed. In five cases he prescribed this treatment. At the end of three or four days the vomiting, diarrhea, and dyspnea had disappeared, and the days following rice-water and vegetable soup were ordered, and gradually the milk diet was resumed.

BOOK-REVIEWS.

THE DISEASES OF THE NERVOUS SYSTEM. A TEXT-BOOK FOR PHYSICIANS AND STUDENTS. By Ludwig Hirt, Professor at the University of Breslau. Translated with permission of the author by August Hoch, M.D., formerly Assistant Physician to the Johns Hopkins Hospital, now to the McLean Hospital, Waverly, Mass., assisted by Frank R. Smith, A.M. (Cantab.), M.D. With an Introduction by William Osler, M.D., F.R.C.P., F.R.S. With 181 illustrations. New York, D. Appleton & Co. 1899.

Though nothing is said about this on the title page or elsewhere, the book before us is really the second American edition. The second German edition came out in 1894. It is an admirable work. Rarely has any medical author, except our own Weir Mitchell, infused so much of his own personality into his descriptions of details usually dry and tedious, such as the symptoms, diagnosis, pathology, etiology and treatment of the incurable forms of nervous disease. This charm of style gives an unusual interest and zest to a perusal of the book and makes it exceptionally welcome as a work of reference. The classification, while embodying some innovations, is rational and satisfactory. There is little in the work that invites criticism, though American physicians would find it more useful if it had contained a fuller discussion of neurasthenia. The author refers to this as a disease especially prevalent in this country, and seems to have drawn his knowledge of it largely from the classic treatise of Beard, and the contributions of other American writers. On the other hand, he considers locomotor ataxia in an exhaustive manner, and has a very satisfactory account also of general paralysis and of nearly all the organic nervous affections. A most interesting and valuable chapter is that on "The Diseases of the Vagus—Vagus Neuroses," under which head the author treats of bronchial asthma and angina pectoris. He goes into the subject of treatment generally much more minutely and practically than is done by many German writers, and, in spite of unimportant shortcomings in a few features, his book well deserves the high opinion which neurologists generally entertain of it. Professor Osler's Introduction consists in the main of an appreciative and, of course, intelligent review of the work itself. The letter-press, illustrations and binding are all entirely creditable.

BAD-NAUHEIM: ITS SPRINGS AND THEIR USES. With Useful Local Information and a Guide to the Environs. By J. Groedel, M.D., Medicinalrat. Second edition. From the German Guide to Bad-Nauheim, by O. Weiss and J. Groedel. Friedberg and Bad-Nauheim, Germany, Carl Bindernagel. 1899.

Within the last few years, the fame of Bad-Nauheim as a locality where special treatment is given of unusual efficiency in certain organic heart diseases, has gone abroad over the whole civilized earth. Under the circumstances, it has been, of course, inevitable that large numbers of invalids with cardiac affections incapable of relief by any form of baths should flock there, many of them to meet with sore disappointment. Nevertheless, numerous cases of recent valvular heart disease and some cases of atonic dilatation of that organ have been greatly benefited by the natural warm carbonated saline baths

of Nauheim, together with the system of very mild resisted gymnastic movements, which was devised by the elder Schott, now deceased. This is not the place to discuss at length the value of this new treatment, but suffice it to say that it promises good results in a number of cardiac affections as well as for chronic rheumatism (for which the baths were originally employed mainly) and claims are made for the baths in *tabes dorsalis*. Dr. Groedel is one of the oldest, most experienced and most highly esteemed of the local physicians in Nauheim, and his little book conveys much valuable information about the place and the various kinds of baths, together with many of the indications for them.

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By D. Braden Kyle, Clinical Professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist, Rhinologist and Otologist, St. Agnes's Hospital; Bacteriologist to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, etc. With 175 illustrations, 23 of them in colors. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899.

Dr. Kyle was a successful teacher of pathology and microscopy before he became eminent as a laryngologist. Hence the striking superiority of his work over most other books on the same subject, on its pathologic side, and especially in numerous carefully drawn and beautifully executed original plates, illustrating histologically cases seen and studied by the author himself. It is for the rest a thorough, full, and systematic treatise, so classified and arranged as greatly to facilitate the teaching of laryngology and rhinology to classes, and must prove most convenient and satisfactory as a reference book, both for students and practitioners. The first chapter, on "The Anatomy and Physiology of the Nose and Throat," gives a clear and accurate description of those subjects and contains a number of highly graphic illustrations. In the next chapter, on "Illumination and Examination," the useful instruments and apparatus are fully described and pictured. The only fault to be found with the illustrations here is, that though one or two of them give an accurate representation of the rear of the author's head and chest there is nowhere shown a front view of his intellectual head and face. Then, after fourteen pages devoted to a "General Consideration of Mucous Membranes," including an account of nasal bacteria, catarrhal inflammation in general, etc.; there follow twenty chapters in which the various diseases of the nose and accessory cavities, naso-pharynx, pharynx and larynx are treated *seriatim* with a conscientious and creditable completeness in all their phases and bearings, both medical and surgical.

Under "Diseases of the Pharynx" a satisfactory account is given of diphtheria, with a number of excellent illustrations of the Löffler bacillus. The author advises an energetic local treatment of this affection with the use of calomel internally, and, in addition, an early resort to injections of antitoxin. He also recommends strongly the use of the latter as a means of prophylaxis. He takes decided ground with regard to antitoxin, insisting that its use both "as a curative and immunizing agent in the treatment of diphtheria has passed beyond the stage of experimentation."

On the other hand, in discussing the treatment of tubercular laryngitis, he

makes no mention of any of the modifications of Koch's tuberculin. Though in this he is in accord with the majority of clinicians, it seems to us regrettable that, since other methods of treatment in this disease are admittedly ineffective, some encouragement is not given to trials of a remedy, which, in the hands of such experts in tuberculosis as Trudeau, Dennison and Von Ruch, has been strongly claimed to cure under proper hygienic and climatic conditions a certain proportion of cases.

The publisher has done his part well, and altogether the book is one which deserves the highest commendation.

FRACTURES AND DISCOLORATIONS. By Lewis A. Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's, and Christ Hospitals; Corresponding member of the Societe de Chirurgie of Paris. Illustrated with 326 illustrations and 20 plates in monotype. Pages xix.-822, with index. New York and Philadelphia, Lea Brothers & Co.

Although this work is in a sense a second edition of the volumes published in 1883 and 1888, it so fully reflects the progress made in the diagnosis and treatment of fractures and dislocations, that it has in reality been thoroughly rewritten, and rendered practically a new work. The Roentgen-ray method of diagnosis has so impressed itself upon our knowledge of fractures and dislocations that it has become an essential part of the treatment of all these injuries. It is as impossible to write a modern treatise on surgery without asepsis, as one on fractures and dislocations without a complete assimilation of the knowledge which we have gained by this new discovery.

Dr. Stimson has appreciated this fact in the fullest manner, and his work is replete with the knowledge gained from this most accurate and scientific method of diagnosis. There is, however, a very apparent lack of illustration by radiographs in certain chapters, and especially in the department devoted to dislocations. This is due, no doubt, to the short time which has elapsed in which illustrations of this character could be collected.

While adhering to the regular classification of fractures in general, and giving to compound fractures a greater importance than antiseptic methods of treatment would seem to warrant, the author lays special stress upon important variations from the ordinary types. These varieties of fractures which have heretofore been called "simple" have been shown to be more serious in their effect upon function than many "compound" fractures. This has called for a change in their nomenclature, with which the author does not seem to be in accord. This is also notable in his methods of treatment, where he leaves the suturing of fragments for cases of non-union or compound fractures. It would seem as if the knowledge gained by the Roentgen-ray method of diagnosis would point out the necessity of some direct method of treating seriously comminuted yet "simple" fractures. While the work is admirable in its detail and comprehensive in scope, we should have been glad to see a fuller discussion of the various methods of treating ununited fractures and delayed union.

The illustrations with which the book is replete are many of them very valuable additions, and yet there are many familiar faces.

PRACTICAL NOTES.

Incontinence of Urine. Besides the incontinence of urine symptomatic of a material lesion of the urinary tract, there exists, as is well known, an incontinence called essential, without any apparent lesion or anterior affection. In certain subjects the bladder is particularly sensitive, and the muscular fibers do not permit of extension beyond a certain limit. If it is exceeded the individual is forced to urinate. During the night sleep renders this sensation of the want to urinate still more obtuse, the child takes no notice of it, and wets the bed. According to Guinon, incontinence of urine is a stigmat of nervous heredity, for in nearly all the cases can be found hereditary antecedents in the parents who had suffered from hysteria, chorea, or other nervous affections. The medical anti-nervous treatment should consequently be the principle of the therapeutics—bromid of potassium, valerian, belladonna, etc.; frequently good results are obtained by pills containing ergot of rye, iron, and a little belladonna.—*Paris Corres. Med. Press.*

Juice of Fungi in Snake Poisoning. Further details are given of the investigations by C. Phisalix concerning the immunizing power of fungi against serpent venom. The material employed in over 200 experiments was obtained from cultivated mushrooms, as these were most easy to procure. Equal weights of finely cut mushrooms and of chloroform water were macerated for 24 hours, and then filtered; the filtrate, preserved by the addition of a few drops of chloroform, was then used as a vaccine. This substance was not in itself harmless, and in large doses even caused death. In spite of all antiseptic precautions, it often caused mortification of the tissues, unless filtered through a Chamberland filter, or sterilized by boiling. The immunizing effect of the injections was, however, in the case of guinea pigs, very marked, and was increased by repetition on the same subject at an interval of 15 to 20 days. The immunity thus acquired lasted for from 15 days to a month.—*Pharm. Jour.*

When Shall the Post-Pregnant Woman Sit Up? Many healthy, well-exercised women do not need to remain recumbent longer than from seven to nine days, while some can begin to get up upon the fifth day without apparent harm. Patients whose muscles are "soft" and who have been accustomed to indolent, lazy living, will require from 12 to 21 days, even though there are no lesions of the uterus or perineum. Lacerations along the genital tract place those so injured in a class by themselves. They cannot get up until their wounds have healed. A good working rule, which always requires individual application, is that a patient should begin to sit

up whenever she can do so without such posture causing gravity congestion in the genitalia. The change of posture sometimes causes an increase in appetite, and even acts as a stimulus to the uterine muscle. The erect posture should, of course, be assumed quite gradually, the patient sitting up only a few minutes at a time, lengthening the time according to the sense of comfort and absence of effect upon the lochial flow. Much assistance to uterine involution can be had by the use of sponge baths, ergot, strychnin, and massage. When we judge from the general condition of the patient that she might be benefited by sitting up, we are justified and obligated to make a speculum examination to note the condition of the cervix and inferentially of the endometrium after the seventh day.—*Obstetrics*.

Surgical Hints. In all amputations make periosteal flaps whenever it is possible. They not only protect the bone, but they prevent adherence of the skin, a complication which gives the patient an unpleasant sense of tension, sometimes amounting to very distinct pain.

It is an excellent idea to preserve certain pathological specimens, such as diseased ovaries and testicles. Their removal sometimes leads to disputes and to unjust accusations, and the possession of the specimens may be of great value in lawsuits for malpractice, etc.

Don't neglect so-called growing pains. While they are usually an indication of myalgia or rheumatism, and as such amenable to appropriate treatment, they sometimes indicate beginning disease of the joints and bones of the lower extremity, and should be very carefully investigated.

It is well to remember that in eclampsia there is greater danger than usual of poisoning by the intra-uterine employment of toxic substances, such as mercuric bichlorid and carbolic acid. It is best to employ nothing but non-toxic substances, such as the saline or the Thiersch's solution.

Fish bones imbedded in the pharynx often escape observation by the laryngeal mirror. Spray a little cocain solution to secure tolerance and examine carefully with the finger. Once you have felt it you may still be unable to see it with the mirror, but you can usually guide the extracting forceps along the palpating finger and extract the offending bone.

When a patient intends to wear an artificial limb after amputation, it is advisable to bandage from the extremity of the stump upward for a good distance, and as tightly as is compatible with good circulation. The reason for this procedure is that the artificial limb always hardens and diminishes the stump, and that judicious prior bandaging will diminish the changes thus brought about, ensuring a better fitting appliance.

The value of local anesthesia, under cocain or by any other means, is very great. But it is well to remember that some patients are so nervous that if they see the steps of the operation they are very likely to faint. It is more than likely that this has often given rise to the erroneous idea that the cocain itself was the fault. It is always best to cover the patient's eyes while operating, or to interpose the body of the surgeon or of an assistant in such a manner as to prevent the patient from seeing what is going on.—*Int. Jour. of Surgery*.

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LECTURE.

*ON THE EFFECTS OF INFLUENZA UPON THE HEART AND
CIRCULATION: THEIR CLINICAL MANIFESTA-
TIONS AND THEIR TREATMENT.¹*

*THE HUNTERIAN LECTURE DELIVERED BEFORE THE HUN-
TERIAN SOCIETY, ON OCTOBER 11, 1899.*

BY A. ERNEST SANSOM, M.D., F.R.C.P.,
Physician to the London Hospital.

MR. PRESIDENT AND GENTLEMEN :

In the first place, I thank you very heartily for the honor you have done me in inviting me to deliver this lecture. I am sure that I address a sympathetic audience, and I will say no more on this point, for if you know what I mean, it matters little what I say.

I have chosen a subject which I think no one can hesitate to believe to be one of practical interest and importance. Since the later months of 1859 we have had influenza with us, and there have been for us frequent opportunities of observing the pernicious features of the disease—the acute symptoms of infection and reinfection, and the multiple and varied phenomena showing the involvement of various structures of the body, sometimes in close, at other times in remote, time-relations with the signs indicating the original invasion.

It cannot be held that science has spoken her last word concerning the malady, and the experience of every member of the medical confraternity may add some facts or observations which can modify our views and add to our stock of knowledge.

¹ From the author's manuscript furnished the INTERNATIONAL MEDICAL MAGAZINE.

On this particular occasion I propose to treat the subject from the point of view of my own personal observation, and in a manner differing from that which I have most frequently adopted. I intend, for the purposes of condensation and brevity, to adopt the didactic rather than the argumentative method. If I show myself dogmatic, kindly remember that I fully recognize the possible fallacies of any dogmata. I will not repeat the oft-cited lines; I am aware that this is an occasion on which I cannot be corrected at the moment; but I do know that it is open to all to bring their own knowledge in the future to annihilate or to correct these utterances. If any one has obtained by precise investigation a knowledge which culminates in more correct conclusions, I am sure that he will find many opportunities of practically displaying it. Only if the deductions I have made from my own observations are fortified by the lessons of your own and others' experience, I ask you to accept and employ them with me.

I have usually presented the investigations I have made in the form of clinical studies. In framing these I have followed the rule, than which I think there could not be a better, displayed before our eyes in the words of Morgagni, every week when we open our copy of the *Lancet*: "There is no other way of obtaining a precise knowledge on the matters which concern the practice of our profession than that of assembling together the records of cases of disease and of scientific investigations with regard to their morbid anatomy and all that pertains thereto—the observations of others as well as the personal investigations of one's self—and then of comparing these together and learning the lessons of their numerous and varied associations." In these days the results of the labors of coworkers are presented in a large mass of printed matter of the greatest interest and importance.

I hope I have never been unmindful of the value of these records. I have endeavored to assimilate them. Since I have had what I consider to be a sufficient field for clinical observation, I have chiefly relied as a basis for my conclusions on the histories and phenomena of cases which I have personally observed. I have compared my deductions with those of others and, where there has been any difference of opinion, I have given my conclusions without fear and without a desire for favor. This is the plan I have always adopted, and the one I always intend to adopt, though I cannot commend it as calculated to induce an invariable peace of mind.

I think I may accept it as a premise, that it is a matter of common experience to a medical practitioner to have a patient come to him with symptoms indicating a disturbance of the ordinary comfortable working of the heart, such disturbance having a time-relation with an attack of influenza. My problems are: How shall we classify these cases? What are the causes, ultimate and proximate, of the morbid phenomena? How ought we to treat them? Before we come directly to our subject, a review of the evidence concerning the primal cause of the disease is necessary.

PRELIMINARY CONSIDERATION—BACTERIOLOGY.

There can be no doubt that influenza is a disease of infection and, as in the case of all other infectious diseases, due to a micro-organism. I take it as proven that the special micro-organism is the bacillus described by R. Pfeiffer in 1892,² and I have little to add to the description of it so graphically recorded by Sir T. Grainger Stewart in his address to the British Medical Association in 1894.³ As Pfeiffer originally held, the bacillus is found only in cases of influenza, and is especially discoverable in the sputa. It is difficult to obtain a pure culture. The bacilli may be cultivated in agar, but more readily if blood be mixed with the agar. Pigeon's blood bouillon was found to be a satisfactory medium by Delius and Kolbe. Pfeiffer recognized the great difficulty of the necessary proof of the bacillus being the true and only agent because of the then impossibility of producing the disease by the inoculation of animals. Most animals are immune, but Cantani's experiments,⁴ recorded in 1896, are of the highest importance in this regard. Cantani injected pure cultures under the dura mater of rabbits and thus produced the characteristic symptoms of the disease. In eight to ten hours temperature began to rise, the maximum fever being attained in from six to twelve hours; then there was a rapid fall to the normal, and death took place by collapse in from eighteen to thirty-six hours after the injection. Together with the rise of temperature were progressive dyspnea, paralysis of the extremities beginning with the hind legs, chronic spasms, and then heart failure. In non-lethal doses chronic meningitis was set up, from which there might be recovery. The *post-mortem* examinations in the fatal cases showed enlargement of the spleen, congestion of the liver with commencing fatty degeneration, a hemorrhagic exudate in the peritoneum, and, in some cases, inflammation of the kidneys.

It has been affirmed that the micro-organisms of influenza can be demonstrated in the blood. This assertion was made by Canon in 1893. Such demonstration, however, must be possible very exceptionally. The presence of the micro-organism in the blood has been denied by all subsequent observers working with improved methods and with greater knowledge of Pfeiffer's bacillus. Yet I have not infrequently found in medical literature that the micro-organism of influenza has been termed the Canon-Pfeiffer bacillus. It is time that a very doubtful doctrine should be discarded, and that the term Pfeiffer's bacillus should be retained. "The influenza poison," says my colleague, Dr. Bullock, Bacteriologist of the London Hospital, to whom I am indebted for much aid in these and other bacteriologic investigations, "belongs to the group of the bacterial *proteins* (Buchner), i. e.,

² Pfeiffer: *Die Aetiologie der Influenza. Zeits. für Hygiene*, 1892, XIII.; *Vorläufige Mittheilungen über die Erreger der Influenza. Deutsche med. Woch.*, 1892, No. 2; Pfeiffer und Beck. *Weitere Mittheilungen über die Erreger der Influenza. Deutsche med. Woch.*, 1892, No. 21.

³ Stewart, Sir T. Grainger: *Address in Medicine*, B. M. J., August 4, 1894, p. 242.

⁴ Cantani: *Wirkung der Influenza bacilli auf des Central nervus System. Zeits. für Hygiene* 1896, XXIII., p. 265.

poisons which occur in the *bodies* of the organisms, and are not excreted (or only to a limited extent) into the media in which they grow (like diphtheria and tetanus bacilli). The toxin of influenza acts on the central nervous system powerfully. Locally, of course, the effects are exerted mostly on the respiratory system." "It has always seemed to me," says Dr. Bullock, "that the closest parallel exists between influenza and gonorrhea in this way. Both influenza and gonococcus spread along a mucous surface; in the one case the respiratory, in the other the urethral; neither penetrates to any depth. Both are intensely parasitic, and are confined to man. Both are difficult to cultivate. Both produce poisons which, of course, are qualitatively entirely different—the influenza protein or poison acting much more specifically on the nervous system than the gonotoxin. Neither organism enters the blood, except with very rare exceptions (gonorrheal endocarditis and other forms of metastatic gonorrhea, etc.). In fact, the influenza poison which is absorbed into the system acts *par excellence* on the nervous system, as has been clearly shown by Cantani's experiments."

MIXED INFECTION.

It was found very early in the bacteriologic investigation of influenza that the microbe of Pfeiffer was very frequently associated with other micro-organisms. The commonest association was with the pyogenic cocci and the pneumococcus. The cultivation of the bacilli of influenza in the presence of other microbes, especially staphylococci, has been experimentally studied by Grassberger.⁵ In the cases of otitis media and inflammation of the membranes of the brain, which are undoubtedly found to be correlated with influenza, the intimate concurrence of the proper microbe of influenza with staphylococci, streptococci, pneumococci, has been abundantly demonstrated. In the pneumonia of influenza it has been shown that in some cases only the microbes of Pfeiffer can be found; in others, these are associated with the pneumococcus (*bacillus lanceolatus*); most commonly of all there are found the influenza bacilli and streptococci together. An intimate association with tubercle bacilli has been observed in some cases. Dr. Wynekoop, of Chicago, found, in several instances, the diphtheria bacillus and the influenza bacillus in the throats of patients, and the clinical symptoms usually suggested the bacteriologic findings. Influenza bacilli were not only found in cases of diphtheria, but also in scarlet fever, measles and pneumonia. In all these it was noticed that there were clinical manifestations which were difficult to interpret until the microscopic examination for the bacilli had been made.⁶ These mixed infections go far to explain the variations of symptoms; the resulting toxins produce varied morbid effects.

⁵ Grassberger: *Beitrage zur Bacteriologie der Influenza*. *Zeits. fur Hygiene*, 1897, XXV., p. 453.

⁶ Wynekoop: Report of Department of Health, City of Chicago, January, 1899.

CLINICAL EVIDENCE OF MIXED INFECTIONS.

I have observed five cases in which there was good evidence that influenza and typhoid fever were running their course concurrently. Two of these were fatal from heart failure. In another case there was a most serious relapse, but ultimate recovery. In the others, recovery took place without complications. In patients who have been the subjects of various forms of malarial fever, I have observed symptoms which have seemed to me to denote a marked reaction with the influenza toxin. I shall have occasion to revert to this point later on. In patients with limited consolidations in the upper lobes of the lungs, the diagnosis has often been beset with difficulty. In some cases the fires of tuberculosis have been quickly kindled, and the progress of the disease to a fatal issue has been appallingly rapid. In others, repeated examinations of the sputa have failed to demonstrate the bacillus tuberculosis, and, though condensations in the apices have given constant fear of the existence of phthisis, the disease, though it has had a protracted course over many months, has eventuated in recovery. It is not my purpose here to consider the clinical aspects of the many forms of influenza-pneumonia; it is sufficient to say that, in some cases, the symptoms have been manifested for many months—even more than twelve months.

CLINICAL EVIDENCE OF THE REACTIONS OF THE INFECTIVE AGENCY OF INFLUENZA IN CERTAIN MORBID STATES.

I have observed a considerable number of cases of gout and gouty manifestations in which there has been a course of severe or of peculiar and perplexing symptoms after an attack or after repeated attacks of influenza. I shall return to this point when I come to consider the irregular heart after influenza. I shall only observe that it seems probable that influenza tends to adversely modify the perverted metabolism in the goutily disposed. In the cases of acute rheumatism a superadded influenza infection, I feel sure, imports grave dangers. I have observed several cases of rheumatic heart disease—pericarditis, endocarditis, or both combined, obviously in direct association with rheumatism—where infection with influenza has produced a most serious aggravation of the signs and symptoms. One such case under my observation was rapidly fatal from heart failure. On the other hand, I have never had before me trustworthy evidence to show that any ordinary form of endocarditis is brought about by influenza alone. Cases of pericarditis and endocarditis have been noted by several observers as occurring from this disease, but, considering the vast number of cases under observation, the correlation must be taken as rare. Althaus states⁷ that in the German army, where 55,263 men suffered from influenza, six cases of pericarditis and four of endocarditis only were noticed. One of these was undoubtedly septicemic, with infective “ulcerative” endocarditis. Parvinski

⁷ Althaus: “Influenza.” London: Longmans & Co., 1892, p. 255.

noted endocarditis following influenza chiefly in persons who had already been subject to heart disease previously to the influenzal infection. The cases which he describes as benign seem to me to be those in which the influenza produced cardiac symptoms temporarily aggravating those of the pre-existing rheumatic lesion, and those described as malignant have the features of ulcerative endocarditis. In a remarkable case sent under my care at the London Hospital by my friend, Dr. Daly, well-marked exophthalmic goiter immediately followed an attack of influenza. There was also valvular disease of the heart (mitral insufficiency). The symptoms of infective (ulcerative) endocarditis followed, and the patient died. At the autopsy well-marked ulcerative endocarditis was found. It might appear at first sight that the influenza infection had initiated all the morbid phenomena. There had been, however, otitis media with suppuration. Undoubtedly the pus-forming organisms were present. The infection, therefore, was not a simple infection by the influenza bacillus, but a mixed infection with the pus-forming cocci, which we know to be capable of inducing ulcerative endocarditis. I have quite recently observed the case of a lady, aged thirty-five, in whom, directly after an attack of influenza, there occurred symptoms of ulcerative endocarditis. There had been an old valvular lesion, and not only so, but the development of a loud systolic murmur over the aorta, especially at the back in the left intrascapular region, made it probable to my mind that an aortitis, such as I shall presently describe as of influenzal origin, had developed. Though influenza may aggravate, and often does aggravate, the dangers of a pre-existing rheumatic heart disease, I am of opinion that it never produces any disease of the heart even remotely resembling the rheumatic.

I am myself convinced that the arthritis, which in some cases accompanies and in others follows influenza, is a simulated and not a real rheumatism. I have had opportunities of observing many cases in which the early symptoms of fever, attended with pains and swellings of many of the joints, were so closely like those of acute rheumatism that the diagnosis was extremely difficult. The influenza infection was, however, distinctly traced, and in none were there affections of the heart and pericardium of the rheumatic form. In other cases the arthritis followed influenza.

I acknowledge that the relations between influenza and rheumatism, or simulated rheumatism, are, in some instances, extremely puzzling, and I think misleading. Previously to 1896 I had observed a series of cases in which fever, with sweatings accompanied by pain and swellings of the joints, became manifested in a way that made the diagnosis of rheumatic fever almost certain. There were, however, no rheumatic associations, but decided evidence of the probability of the infection of influenza. In another series of cases, also in close relation (or in more remote time-relation) with influenza, there were severe and protracted pains in many joints in a manner that suggested to me an acute form of osteoarthritis,

I was very anxious to get the criticism of my brethren on the views which I expressed in relation to these cases, and I embodied the histories and deductions in a paper which I submitted to one of our chief medical societies. The paper was returned to me by the council, and I was denied the privilege which I sought of obtaining confirmation or demolition of my conclusions. The paper is published under the title of "Influenza Arthritis" in the *Medical Press and Circular* of June 3, 1896.⁸ Subsequent experience has confirmed these views. In some cases, the initial symptoms of influenza closely resemble those of acute rheumatism—there is an extremely painful polyarthritis with fever and sweatings, but these are no more of the nature of rheumatism than are the forms of arthritis which attended cerebro-spinal meningitis or dengue fever. To call these painful affections of the joints which attended the developments of an acute disease of the nervous elements rheumatism, would be nothing but an abuse of terms. The more protracted form of severe arthritis, which sometimes is manifested in the early stages of influenza, but is more frequently met with some months after the attacks, is of the nature of osteoarthritis and has not the association of true rheumatism.

I think it of the highest practical importance that we should differentiate true rheumatism from its many counterfeits. It may seem paradoxical to say that rheumatism is not a painful disease. Our patients, for the most part, think that all painful affections are rheumatic. Yet the painful arthritis of true rheumatism is only a very small part of the morbid process. It may be insignificant; it may be even entirely absent. Morbid changes affecting the endocardium and the heart structures may occur in the fetus in utero without the mother participating in the disease. In the child, the affections of the joints in rheumatism are often very trivial, and in the adult, though there may be frequent repetitions, the pains in the joints do not last many days and are usually readily controlled by salicin or the salicylates. The rheumatic affections of the heart, however, have a very protracted course and are often strangely symptomless. Clinical observation and morbid anatomy concur to show that all the main structures of the heart may be involved and oftentimes permanently altered by disease of rheumatic origin. Pericarditis, in some cases, passes away, but in many ends in permanent adhesions and consecutive change in the heart muscle. Endocarditis goes through changes (alternation of endothelium and formation of vegetations, exudations and thickenings, fibrosis and contractions, calcareous deformity and degenerations), lasting, in many cases, for many months or many years, but is unattended by symptoms to mark the course and nature of the morbid changes. The muscle of the heart, the myocardium, may also be profoundly affected, temporarily or permanently, by the

⁸ "Influenzal Arthritis." *Med. Press & Circ.*, June 3, 1896, p. 569; "The Nature of True Rheumatism," *Clin. Jour.*, December 7, 1892, p. 81; "Non-Rheumatic Arthritis and Some of its Associations," *Int. Clin.*, 1893, I, p. 58; "The Treatment of Rheumatism," *ibid.*, 1894, I, p. 1; "Complicated Rheumatism," *ibid.*, 1895, I, p. 19.

rheumatic process. The whole heart may be thus involved—the general “carditis” of Sturges—or there may be varying enlargements of all the structures of the heart, conditions so well studied by Drs. Lees and Poynton. These all constitute well-defined morbid conditions, phases of the rheumatic heart. The varieties of the truly rheumatic diseases of the heart may, I think, conveniently be considered in two categories—the violent and explosive, and the slow and insidious. In the former the attendant signs of arthritis—the *ensemble* or rheumatic fever—are usually present and the disease is acute and severe. If there be endocarditis, this results in course of time in thickening and crumpling of the mitral curtain and the induction of the condition of mitral insufficiency. In the latter, the course of disease within the heart is slow, and often unattended with obvious symptoms, the mitral orifice becomes narrowed by degrees and there is the affection known as mitral stenosis. Of course, there would be no proof of the rheumatic origin of this variety of disease, if it were not that in some of the cases there occur obvious signs of rheumatism, and at any autopsy the morbid appearances are exactly those of rheumatic endocarditis.

Arthritis in a rheumatic subject, of course, is strong *prima facie* evidence of any structural disease of the heart associated therewith being of rheumatic origin, but it should be borne in mind that all arthritis is not rheumatic arthritis. The forms of non-rheumatic arthritis are multiple and varied. Inflammation of the joints may occur in relation with mumps, with enteric fever, with dysentery, and with certain acute diseases of the nervous system. I have omitted mention of scarlatinal arthritis, for this is considered by many not strictly of the rheumatic form. There is very strong ground for belief that the severe and violent arthritic disease known as rheumatic gout, arthritic deformans, osteoarthritis, etc., has no essential relation whatever with rheumatism.

In all forms of non-rheumatic arthritis, symptoms of cardiac disturbance are frequently complained of by the patients. I have noted that the subjects of the rapid heart and palpitations and of the irregular heart are, in large proportion, the subjects of rheumatic gout. My own observations, clinical and in the field of morbid anatomy, show that there is no endocarditis in these cases, no structural heart disease, unless it be dilatation of the heart. The probable pathogenesis and the clinical features of such dilatation I shall touch upon subsequently. I need only say now that, in my opinion, the heart affections which are in association with true rheumatism differ “*toto coelo*” from those which are met with in the subjects of osteoarthritis. In the former, there is well-defined organic diseases; in the latter, disturbances of the nervous mechanism. But in both classes of cases modifying circumstances have to be considered. In the truly rheumatic class, nervous perturbations can be epiphenomena, and, in the class of cases essentially non-rheumatic, there may be engrafts upon a pre-existing rheumatism. So also between the truly rheumatic arthritis and the non-

rheumatic arthritis, which has essentially in its origin nothing to do with rheumatism—there is a class of cases which I have described as *complicated rheumatism*. There are cases in which a tendency to osteoarthritis (rheumatic gout) complicates a pre-existing rheumatism causing the involvement of joints (especially the small joints of the hands and fingers), which usually escape in true rheumatism, an extension of the involvement of the structures of the joints and a great protraction and aggravation of the sufferings. In true rheumatism, the pathologic process in the joints is but an exudation from the congested synovial membranes, usually absorbed in a few days; in osteoarthritis, all the structures of the joint—bones, cartilages, fibrous structures and synovia—are intensely inflamed, hypertrophy and atrophy, hyperemia and degeneration go on together. There is a sort of mania of the joint or joints. The rheumatic heart is in a state of permanent disease or of long continued liability to organic disease—the non-rheumatic heart of arthritis is affected with, or liable to, disorders of its nervous mechanism and, in a minority of cases, to degenerations and alterations of its muscles but not to essential organic disease of endocardium, pericardium or myocardium. If I am permitted to express, without argument, my views as to the prime factors in these cases, I would say that true rheumatism is a disease in which, whatever its “*primum agens*” the pathology is essentially humoral, with long-lasting effects upon serous membranes; whilst osteoarthritis is probably primarily a disease of the nervous system causing violent perturbations in the nutritive processes of the joints. This tendency to a ready development of arthritic disturbances or a violent commotion, in some cases, is the result of a toxin operating upon a certain part of the cerebro-spinal nervous mechanism at any age. The influenza toxin is very potent to produce it. If occurring in a rheumatic subject or in a gouty subject, it greatly aggravates the susceptibilities to the cognate symptoms of these diseases. The tendency on the part of the individual which may render him a so-called arthritic or may induce what our continental brethren term “arthritism,” is essentially a morbid condition of the central nervous system, which may or may not be correlated with rheumatism or with gout. I hope that these expressions of mine will not be put down as mere guesses—baseless, formless and visionary. I devoted my clinical lectures at the London Hospital during two years to a review of cases under my own observation of true rheumatism and of simulated rheumatism. My first lecture on the criteria of true rheumatism was printed in the *Clinical Journal* of December 7, 1892; some of the succeeding lectures on non-rheumatic arthritis and some of its associations, on the treatment of rheumatism, and on complicated rheumatism, were printed in the *International Clinics* for 1893, 1894 and 1895.

EFFECTS OF INFLUENZA UPON THE NERVOUS SYSTEM.

Sir Thomas Grainger Stewart said, in his address in 1894, that in in-

fluenza the nervous system suffered the most frequently. He mentioned the well-marked peripheral neuritis affecting the hands and feet which he had observed, the impairment of the integrity of the cord and brain, the meningitis, the congestive and inflammatory changes in the medulla, the pons, and other parts and the mental aberrations ranging from mere lowness of spirits to the most pronounced and dangerous melancholia or other serious forms of insanity.³ Dr. Althaus, who made a very careful and elaborate study of the extant evidence concerning the disease, in 1892, published a most valuable bibliography containing all the important observations of continental as well as English contributors and gave a long record of affections of the nervous system, including post-influenzal psychosis, post-influenzal diseases of the brain and its membranes, diseases of the spinal cord and its membranes, diseases of the peripheral nerves, diseases of the sympathetic system of nerves and general neuroses.⁷

Post-mortem investigations have shown local hyperemia of brain and membranes, hemorrhages, exudations (serous in some cases, purulent in others), and, in some instances, disorganizations and degenerations of the nerve-cells and fibers. Mackay⁹ found in a case of cervical meningo-myelitis initiated by influenza, swelling of the cord in the cervical region, congestion and thickening of the membranes, adhesions of the dura mater and thick fibrinous exudations. The cord in the affected area was soft and pulpy and, at one part, completely disintegrated. The nerve trunks in the left side appeared wasted. In a case recorded by Ferguson in which there had been agonizing abdominal pain during convalescence from influenza, it is said that the nerves and ganglia throughout the abdomen were found to be inflamed and there was marked degeneration in some of the nerve tissues.⁹ The effects of the experimental inoculation of the influenza-microbes in inducing inflammatory and destructive changes in the nerve cells and fibers I have already noted.

Amongst the cases under my own observation, have been peripheral neuritis (in one case affecting both legs and inducing complete paraplegia, which recovered), and in another brachial neuritis, followed by wasting of muscles. In many typical examples there was recovery without wasting—neuritis involving branches of the fifth nerve, evidenced by intense neuralgia, cerebro-spinal meningitis; one case recovered, another was fatal, a case which seemed to be a mixed one of peripheral neuritis with anterior poliomyelitis with much resulting deformity. Many cases of diseases of the spinal cord (some of which are published in the *Liverpool Medico-Chirurgical Journal*, 1895), also very marked cerebro-spinal disseminated sclerosis, and a large number of cases in which the functions of the brain were disturbed in minor degree, to say nothing of a large number of "mental" cases—psychoses.

⁹ Mackay: "Cervical Meningo-myelitis Following Influenza," *Lancet*, August 1, 1891; "Clinical and Pathological Observations on Nervous Diseases." Bristol: John Wright & Co., 1894, pp. 3-11.

There can be no doubt that the well-defined diseases and disorganizations of the nervous elements are due to the toxin of influenza.

Seeing that in some cases the organic disease in certain areas of the nervous system, central and peripheral, is manifested in the early stages of the disease, and in others not until long periods (often many months) after apparent convalescence, it would seem that the toxin is evolved in some cases early, and that, in others, the microbes may be long latent before maturing their poison. It might seem possible, inasmuch as the painful and obvious experiences of diseases are repeated at intervals and may even be periodic—when there was no evidence of reinfection that there may be periods of quiescence alternating with outbursts of the toxin; but this hypothesis is not necessary, for the initial effect may be a disintegration of some of the nerve elements in certain areas leaving these in an imperfect condition—a state of irritable weakness—competent at some periods to fulfil their functions and at others incompetent. The process of healing, of complete restitution, may be, and often is, very slow.

I propose now to revert to my original plan and present a summary of the teachings of my own personal observations of cases in which the functions of the circulatory mechanism have been impaired in close, or in more remote but causal, relation with influenza. I shall classify these under the symptom which was the dominant one in the various cases under observation. In a paper communicated to the Medico-Chirurgical Society, June 12, 1874, I gave a resumé of 100 cases in which these were thus classified: Morbid acceleration of the heart's contractions (tachycardia), 37 cases; irregularity of the heart, 25 cases; abnormal retardation, 5 cases; pain at the heart, 23 cases; organic disease of heart, 5 cases. I do not intend to give statistics on this occasion. I have had a large series of cases under observation since, but I think that the above fairly and generally represents the relative frequency of the morbid symptoms manifested.

THE EFFECT OF INFLUENZA IN INDUCING THE CONDITION OF RAPID HEART.

An abnormal excitation of the heart's contractions occurs as a very frequent, perhaps the most frequent, sequel of influenza. The morbid acceleration (tachycardia) may be persistent for long periods, or may be intermittent and accompanied by the other symptoms of palpitation. In some cases it occurs with, or immediately after, the initial feverish signs of influenza infection; in others, it begins to be manifested some weeks or months after the original attack. In the communication mentioned, the cases of morbid acceleration of the heart cited included only those in which the observed rate was 100 or over per minute—this rate persisting for long periods. If we include cases of intermittent acceleration, the number observed would be at least trebled. In the cases of persistently rapid heart the majority evidenced little or no discomfort. In one-fourth of the cases, the already rapid heart was accompanied by further accelerations, with dis-

comfort at intervals. It seemed strange that, in the case of a patient whose heart was beating so much in excess of its usual frequency, there should be so little subjective discomfort. This is, however, quite in accord with our experience of essential tachycardia in general—a person whose heart is beating 120 times a minute or more may be going about his usual avocations, and may say that he is quite well. The vasomotor tone of the arteries seems unaltered, the quickened action causes an increase of the tension within the artery, but the volume is reduced; the pulse is narrow, but the arterial wall is not thickened. The arterial wall becomes relaxed and the pulse dicrotic only when there are painful palpitations or feverish attacks.

In other cases are observed the phenomena so frequently associated with Graves's disease—palpitation, flutterings, flushings, perspirations, faintness, and tremors. In a large number there were explosive attacks often occurring at night—paroxysmal dyspepsia with flatulence, nausea, gastralgia and diarrhea, associated in some cases with dyspnea, or with short, quick breathing, tachypnea, and a sense of failing heart. These attacks I have termed "vagus storms"; they seem to involve all the tracts supplied by the pneumogastric nerve, but in some cases one area disproportionately to the others.⁸ They are often accompanied by headache or interchanged with attacks of migraine.

RELATION WITH CARDIAC DILATATION.

I have no evidence that there is in these cases any association with structural disease of the heart other than dilatation of its muscular walls; and I found that such dilatation is comparatively rare. There is no relation whatever between the rate of acceleration of the degree of perturbation of the heart and the evidence of such dilatation. In most of the cases of long-continued acceleration of the heart's action, when the rate was observed on all occasions to be 120 or more, the outline of the heart as determined by physical examination was not enlarged; in fact in some cases it seemed smaller than the normal; on the other hand, in some cases where the heart rate was only slightly accelerated and not many symptoms were complained of, there was undoubted evidence of enlargement. I think I observed this enlargement more in males than in females. In the very pronounced cases where all the signs of Graves's disease concurred, the heart was usually small, rather than large. I am sure that in some cases the dilatation is temporary, and, taking the evidence from all sides, I am convinced that the dilatation in these cases is primarily due to an affection of the nervous mechanism—probably a special involvement of some part of the vagus roots and not to a primary disease of the muscle fiber. In a very small minority of cases, a permanent enfeeblement of the myocardium may ensue and the dilatation be more lasting. I have had under observation a few cases in which an acute dilatation of the heart occurred in a manner which con-

vinced me that a nervous lesion was the immediate cause; in fact there were the associated signs of a neuritis of the vagus. For instance, in a man aged forty, an alcoholic, who had an acute febrile disease, no doubt an influenzal infection, the heart became extremely dilated, the pulse rate went up to 200, and there was great dyspnea. The physical signs showed that the extreme dilatation receded day by day till the thirteenth day of observation, when it was apparently normal. The rate of the pulse dropped from 200 day by day until on the sixth day it was 80, and afterwards 72 and 56. In this case I think an alcoholic neuritis was reinforced by influenzal infection. I have observed similar heart symptoms in some cases of influenzal disease of the spinal cord.

THE EYELID AND GLOBE SIGNS.

I draw attention to them, not only because I think that they are important for diagnosis and clinically useful during the observation of the cases, but also because they afford important evidence as to the nervous origin of the disease and of the locality of the areas implicated. The signs, some of which are observed in a majority of the cases of paroxysmal post-influenzal tachycardia, are (1) retraction of the upper eyelids toward or under the margins of the orbits (Dalrymple's sign, often in error called Stelwag's sign). The presence of this sign gives the eyes a peculiar staring appearance; (2) a well-marked tremor of both upper and lower eyelids when the patient endeavors to gently close them. This is manifested in the early stages of recovery; it precedes the stage of tonic retraction. (3) The well-known von Graefe's sign, in which the upper eyelid does not follow the downward movement of the globe but, remaining near the orbit, causes the appearance of a white band of sclerotic above the iris. (4) A disturbance of the normal balance of the muscles in the two orbits so that one eye appears to be on a lower level than the other (Dixon Mann's sign). (5) The well-known prominence of the globes exophthalmos. That these signs, or some of them, are so frequently observed in influenzal cases of tachycardia goes far, I think, to prove that the origin of the affection is not in the heart nor its ganglia, but in the central nervous system. I believe, with Mr. Arthur Maude, that the lid symptoms mentioned are due to changes in the oculo-motor nuclei causing a paresis of the orbicularis and upper facial muscles which are innervated by fibers derived from the oculo-motor nuclei and passing down to the trunk of the seventh nerve by the posterior longitudinal bundles. Thus the levator palpebræ, insufficiently antagonized, draws the eyelids upward, the normal correlation of the eyelid with the muscles of the globe is disturbed, and the enfeebled condition of the orbicularis is in some cases manifested in tremor; and, when want of support of the globe is still more marked, the eyeball protrudes. In some cases it has been shown that the paresis in Graves's disease involves the third nerve, for ophthalmoplegia has been noted in a few cases.

TREATMENT OF THE RAPID HEART OF INFLUENZA.

In the first place, I think one should acknowledge failures. I do not know of any drug treatment that can be relied upon to reduce the abnormal rapidity of the heart's action. Digitalis and all such cardiac tonics fail completely. The only condition in this category in which it is useful is where there is a cardiac dilatation which lasts some weeks, for in the acute forms of dilatation it is inert or harmful. Then it should, I think, be given in full doses—10 to 20 minims of the tincture or half a dram of the infusion, or one grain of the powdered leaves three times a day for three days, with intervals of three or more days in which the drug is withheld; or the alkaloid digitalin, 2 to 4 granules of Nativelle's, each containing one-tenth of a milligram of the crystallized digitalin, may be administered once in the twenty-four hours for two days consecutively, with interval of at least three days. Or a hypodermic injection of a solution of two of the gelatin discs, Savory and Moore's, containing $\frac{1}{100}$ grain of digitalin each, may be made daily for not more than three consecutive days. The intermittent administration of digitalis or digitalin is, I think, much to be preferred to the continuous.

No drug, I think, should be continuously administered which tends to increase the intra-arterial tension or to excite the heart. Iron preparations are generally ill borne. Small doses of arsenic, 3 to 5 minims of Fowler's solution well diluted, administered three times a day, constitute the best tonic treatment. Alcohol, in forms and doses that quicken the already excited heart, is generally to be avoided. At any rate, champagne and Burgundy, I feel sure, do much harm; whilst Bordeaux claret, and the still Moselles are permissible. A simple diet, of which milk is a considerable item, is the best.

The only treatment of the persistently rapid heart which has reasonable probability of success is, in my opinion, the administration of weak continuous galvanic currents through the course of the pneumogastric nerves, as recommended by the late Mr. Cardew. The current should be of 2 to 4 milliamperes (from 6 to 10 of Schall's cells), the anode well moistened being applied to the nape of the neck, and the cathode, also moistened, in the groove in the neck between the sterno-mastoid muscle and the thyroid cartilage. The administration should be for six minutes, three times a day, the course of the right and the left pneumogastric being treated on alternate occasions. Any good influence from the treatment is manifested very slowly. Improvement rarely begins until the treatment has been pursued for six months, but the recoveries which I have witnessed, have been very satisfactory.

In the cases accompanied by any or all the signs of Graves's disease, I have found treatment by thyroid gland, thymus gland or suprarenal capsules (or any preparations of them) quite useless. Yet, in the minority of cases in which there was decided enlargement of the thyroid, the application of

ice-bags over the swollen gland or the frequent sponging with cold sea-salt-water appeared to be followed by much benefit. I can find time on this occasion only to very briefly advert to the treatment of the cases of paroxysmal tachycardia and of palpitations occurring with vagus storms. The one chief indication is to train the patient into conditions of comfort. For the insomnia which occurs in a large proportion of the cases, I think the best treatment is a nightly draught containing 20 to 30 grains of sodium bromid, together with a cachet containing 10 grains of chloralamid. A second dose of 10 grains of chloralamid may be given during the night if sleeplessness persists. In some cases trional agrees better than the chloralamid. It is best to avoid preparations of opium or morphia, but sleep must be procured by these in some cases for limited periods.

For the treatment of the cases accompanied by dyspepsia, I think the alkaline carbonates are the most useful. In the cases of paroxysmal palpitation or heart discomfort or of any form of vagus storm, the patient should be provided with an agent which gives comfort at the very beginning of an attack, at the slightest warning that a paroxysm is impending. In many cases I have found nothing better, certainly nothing so innocuous, as phenacetin. I generally prescribe a wafer cachet containing 8 grains of phenacetin and one of camphor. This is to be swallowed after having been moistened by a mouthful of water, directly discomfort is experienced. If the symptoms are unrelieved in half an hour or an hour, a second cachet is to be taken.

In some cases antipyrin in fifteen-grain doses, dissolved in water, is more effectual than phenacetin. If either of these drugs control the symptoms, there is a good moral effect upon the patient. He feels that he has a trustworthy remedy at hand, and he succeeds in reducing an intolerable discomfort, in course of time, to reasonable comfort.

THE IRREGULAR HEART OF INFLUENZA.

I think it must be regarded as a matter of common experience that irregularity of the action of the heart is observed very frequently in patients after an attack of influenza. I gave an analysis of thirty such cases in a paper read at the meeting of the British Medical Association in Bristol in 1894.¹⁰ I have had opportunities of observing a large number of cases subsequently. One important and, it might seem, unexpected lesson enforced by a study of these cases is that there is no sort of proportion between the degree of irregularity of the heart and the subjective suffering of the patient. There may be an extreme irregularity, the heart running riot as it

¹⁰ "Notes of Three Cases of Disease of the Spinal Cord Occurring after Influenza: With Observations." Liverpool: *Med. Chir. Jour.*, January, 1895, p. 118; "Paroxysmal Dyspepsia, etc.," *Int. Clin.*, 1897, p. 13; Address on "The Investigation of Some of the Nervous Disorders of the Heart," *Trans. Med. Soc. London*, Vol. XXI; "The Irregular Heart after Influenza," B. M. J., November 10, 1894, p. 1,042.

were—a "*folie du coeur*," and yet the subject of such cardiac irregularity be wholly unaware of any abnormal action of the heart. On the other hand, a very slight irregularity—a mere occasional intermission—may be attended by extreme distress and precordial anxiety. This fact should, I think, induce us to keep the attention of the patient as much as possible away from the heart. He should not take observations of his pulse, nor fix his attention upon the mode of working of his heart. A patient may be intensely introspective and may even complain of feelings of heart failure when the heart is manifesting a perfectly normal action. Such cases come perilously near mental aberrations; but I think we should endeavor to explain these by physical causes, and, taking as proved that the perturbations of the heart's action after influenza are due to changes in the nerve-elements, to ascribe them not to a disturbance of such functions of the vagus as are concerned, not with the cardiac reflex, but to a disturbance of the nerves which have to do with the sense of well-being of the heart. The prognosis even in the mental disorders due to influenza is more favorable than when such aberrations are due to other unexplained causes. A review of the cases under observation shows most convincingly that there is, in a considerable number of cases, an association with Graves's disease in all its symptoms, or in some of them just as obtains in the cases of rapid heart. In post-influenzal Graves's disease there may be irregularity of the heart instead of rapidity, or as well as rapidity, and I do not think this point has been sufficiently recognized. In certain cases the conditions of irregularity and of rapidity are interchanged; marked tachycardia occurs at one time, marked arrhythmia at another. In a considerable number of the cases of irregularity of the heart after influenza, I have noticed a disturbance of hearing or auditory vertigo, and the removal of the causes of any reflex disturbance of the nasal auditory mechanism has been of advantage in treatment.

The most important association of the post-influenzal irregular heart is with gout and goutiness. In the gouty generally there have been very serious symptoms; in some, repeated attacks of acute nephritis, although not the progressive changes of interstitial nephritis; paroxysmal dyspepsia has been more violent than in the other cases. There have been attacks in which one feature has been the abundant excretion of uric acid in the urine—uric acid storms—and in many the heart symptoms, pain, distress and heart failure have been very severe and, in some, fatal. There are, however, exceptions to the generally grave significance of the heart irregularity in the gouty that have become infected with influenza. In a case which I observed, in which an extreme irregularity was manifested after influenza in a gouty subject, there was a complete absence of suffering or distress, and the patient was quite unaware that the heart's action was other than the normal. I arranged that he should not be informed that there was any irregularity, and in course of time a completely normal action returned.

TREATMENT OF THE IRREGULAR HEART AFTER INFLUENZA.

I have little to add to the lines I have suggested in regard to the rapid heart. The restoration of regularity of action of the heart is even more slow than the restitution in cases of tachycardia; in many cases irregularity persists though the patient returns apparently to normal health. The treatment of the painful manifestations will be touched upon hereafter.

I think the irregular heart is influenced favorably by galvanism in the course of the vagi, just as in the case of the rapid heart. The ruling principle of treatment should be the gradual training of the patient into conditions of comfort and regularity. Some of the medicinal means tending to this end I have already mentioned.

The training of the circulation by physical methods is of high value and importance. Massage, muscular exercises, baths and bathing are agencies of great usefulness, but I cannot discuss these in the limits of this lecture. With these, the abstraction of the patient from home cares and anxieties and the institution of climatic treatment, sea voyages, and means whereby the purest possible supply of fresh air is ensured is now rightly esteemed amongst the most important of therapeutic agencies. So the "cures" elaborated in many of the health resorts of the country and abroad are to be highly appreciated. They are useful for the training of the patient into other and better conditions. I think, however, the patient should be made to understand that the sojourn at any given place is not the be-all and end-all of treatment, but that he should continue to adopt the rational methods of diet, hygiene and training which he has learned, and should not slide back into faulty ways. I most emphatically condemn any method of procedure which brings the varying conditions of his disturbed circulation or disordered heart frequently before the patient's mind—sphygmographic records are valuable in their way, and so are recorded observations of the size and shape of the heart, but if the patient be allowed to study them too often, I think it tends to the induction of unhealthy valetudinarianism. We have plenty of evidence of the sometimes evil influence of mind on the cardiac action. We may obtain one cogent illustration if we turn to any manual of forensic medicine, and read the case of Colonel Townsend, who, by a mental effort, could slow down his heart; he experimented once too often, slowed the heart down to arrest—and died."¹¹

I would also suggest that the records showing the reduction in the precordial dullness, often considered to be crucial evidence of improvement, should not be accepted without much discount. Under any treatment, or under no treatment, there may be variations from day to day, and I am myself convinced that the nervous factor in dilatation of the heart has to be taken strongly into account; and when dilatation of the left ventricle has occurred from organic disease, I am convinced that it is not always a condi-

¹¹ Guy and Ferrier: *Forensic Medicine*, 6th ed. London: Renshaw, 1888, p. 214.

tion to be sorry for—such dilatation may be evidenced when there is complete compensation; for if there be inadequacy of the mitral valve, for example, the left ventricle must have a larger capacity in order to give a due supply to the aorta and just sufficiently supplement the loss due to regurgitation.

POST-INFLUENZAL BRADYCARDIA—THE SLOW HEART AFTER INFLUENZA.

I have had abundant evidence to show that an abnormal retardation of the heart's action may be a sequel of influenza in like manner, though not so frequently, as an abnormal quickening or an irregularity. Such retardation may be paroxysmal or continuous. I have observed the case of a man aged sixty-five, in whom after repeated attacks of influenza the usual pulse of 72 fell to 48 for two to four hours every afternoon for a week. The periods of bradycardia were accompanied by much distress, so that the fairly active man was obliged to lie down until the pulse had regained or had in part regained its normal frequency.

In many other instances of slow pulse after influenza, the retardation has persisted during all the time the case was under observation. These rates per minute have been 56 (three cases), 54, 50, 40, 36, 19. My cases showed that the danger to life in post-influenzal bradycardia was relatively greater than in tachycardia and arrhythmia. In some cases, pain was severe and such pain was generally epigastric, but the chief danger was from syncope, which might occur with no painful manifestations.¹⁰

The treatment in cases of slow heart has less satisfactory results than in the other cases of perturbation of the heart's rhythm. Daily massage of the extremities I think to be of service. It seemed probable that the administration of belladonna, 10 minims of the tincture three times a day, had a favorable effect. At any rate, in one of the cases I have mentioned, the pulse frequency under this treatment rose from 19 to 33, and the patient seemed to have much improved; he died suddenly, however, after he had left the hospital.

PAIN AT THE HEART AFTER INFLUENZA.

In the *Lancet* of January 2, 1892, I gave an analysis of seven cases of severe pain at the heart after attacks of influenza which I had observed. In a communication to the Royal Medical and Chirurgical Society in 1894 I reviewed the evidence in twenty-three other cases. In eight of these thirty cases the pain was paroxysmal, and the attacks closely resembled those of angina-pectoris. The paroxysms of pain were in some cases of extreme intensity. I recorded cases in which complete loss of consciousness attended the paroxysm; a loss of consciousness also occurred in one case where the pain was not intense, only a dead pain over the heart being noted. In several cases there were radiations of pain down the left arm, the neck, and the back, and in some there was the feeling of impending death. It would seem therefore, that the attacks resembled in the closest manner true angina-

pectoris. Yet none of these cases were fatal; I found no signs of abnormally high intra-arterial tension, and, in those persons who manifested the most intense paroxysms, the conditions of the heart both in rhythm and in integrity of structure, so far as could be determined by physical examination, were quite normal. I concluded that the cause of the symptoms was a disorder of the nerves alone or the central nervous system—a form of neuritis or a visceral neuralgia—and not a true angina-pectoris. From the evidence presented, I thought that in similar cases a generally favorable prognosis would be justified. Further experience, however, failed to bear out this satisfactory conclusion, moreover, it went far to indicate the nature of the process by which, in a minority of cases, organic disease of the heart is set up by influenza. I recorded in my article on diseases of the blood-vessels in the *Twentieth Century Practice of Medicine* (Vol. IV., p. 460), the case of a lady who, after a second attack of influenza, manifested intense sternal pain and the aggregate of symptoms of acute aortitis. After great agony for twenty-four hours, the patient died in the night; there was no *post-mortem* examination. A second case of a lady, aged sixty-one, went a more protracted course. After influenza-infection, there was pneumonia, accompanied by intense sternal pain and the development of a systolic murmur at the apex with dilatation of the heart. There was repeated pneumonia. The heart disease became chronic, and death took place three years after the acute attack of influenza. In this case an autopsy was performed by my friend, Dr. Basil W. Walker, and the signs were carefully recorded. Subsequently I have had a series of cases offering, both from the clinical side and from that of morbid anatomy, evidence of aortitis, extensive or limited, acute, subacute or chronic.

According to the clinical evidence, these differ from the acute cases of simulated angina-pectoris which recover, (1) in that the severe pain is brought about or aggravated by very slight movements or exertion; (2) there is a peculiar “dead leaf” hue of the countenance and a more marked facies hippocratica at all times; (3) that though there may not be a persistent high arterial tension, if the case is observed during a heart-attack the radial artery is found to become contracted and narrow, and the face and mucous membranes to assume a more pallid hue, the artery again dilating and a flush returning to the face and lips when the attack passes off. At the *post-mortem* examination it is not difficult in some cases to overlook the appearances or to ascribe them to an old ordinary chronic atheroma. If the living membrane of the aorta be carefully inspected, there will be found pale elevated patches usually put above the aortic cusps and these swellings may be found to encroach upon the lumen of a coronary artery; in the more chronic cases there are also other patches, showing the softening and transformation of ordinary atheroma. I believe that any enfeeblement of heart fibers, any degenerative change therein, is secondary to these changes of acute, subacute or chronic aortitis.

The morbid signs do not commence in the lining membrane of the aorta. This may be felt quite smooth over the elevations and may even remain thus smooth and normal, though subjacent plates of calcareous substances may be palpated and broken by the fingers. The first change is not in the aorta, but in the terminal branches of the nutrient arteries of the aortic wall at certain parts—the *vasa vasorum*. In the adjacent deeper layers of the internal coat may be found round cell infiltration and, in the more superficial layers of the intima, the fibers are separated by an edematous infiltration, thus causing the elevations or swellings. I cannot here consider these changes at any length, but I have made a large number of microscopic observations and some of these are already published in my article in the *Twentieth Century Practice of Medicine*.¹³

The clinical evidence, happily, shows the probability that the morbid changes of aortitis may be in some cases limited in locality and there may be a return to good average health. In the case of a man, aged forty-one, watched during successive attacks of influenza, there were periods of intense distress and pain referred to sternum and right shoulder (and afterwards abdominal epigastric), together with signs of repeated pneumonia. The paroxysms in this case were intense, but the patient returned to normal, or almost normal, conditions of health. At the earlier period the whole heart was much dilated, but at the later its outline was within normal limits; but systolic and diastolic murmurs (both of slight intensity) told of some imperfection left of the aortic valves. A similar case was that of a lady, aged twenty-seven, in whom, after repeated influenza, with severe precordial distress, slight and variable aortic murmurs were heard. Sometimes these became inaudible, but they were again discoverable, though there were no symptoms of heart trouble. In another case, that of a man, aged forty-nine, after severe symptoms of cardiac distress, long continued, the sufferings were located at the epigastrium; and on many occasions I palpated the abdominal aorta and discovered a localized pulsation; the question was a very difficult one whether this was simply neurotic, or a commencing aneurism. Happily, saccular dilatation did not follow—the patient became restored to fair health; I think it very probable, however, that there was a localized endarteritis in the abdominal aorta, which did not go on to adverse changes. I feel that I ought to express this view with much reserve, but, from the evidence before me several cases in which there was no probability of pre-existing disease but the development of signs of slight and limited disease in the aorta or near its valves, and having the most cogent evidence that influenza can induce acute endarteritis and acute and subacute aortitis, I

¹³ "Neuropathic Dyspepsia and its Correlations with Disturbances of the Rhythm of the Heart," *Lancet*, August 28, 1897, p. 524; "On Some Painful Affections Following Influenza," *Lancet*, January 2, 1892, p. 14; "Diseases of the Blood-Vessels," *Twentieth Century Practice of Medicine*, Vol. IV., pp. 460, 523; also pp. 466, *et seq.*

think the conclusion is legitimate that the form of organic disease which, in the absence of other disease factors, we observe after influenza, is that which is due to morbid changes beneath the endothelium and between the fibers of the intima, the patches produced by such changes being scattered over areas of more or less extent. In some cases there are repeated invasions, so that the signs indicate in some parts recent and, in others, more chronic changes. In the favorable cases, there is a limitation of the area, and the degenerations of tissue and necrotic changes are arrested, scar tissue alone remaining. In regard to the treatment of the very acute cases, I fear that no plan is of much avail to avert the fatal tendency, but it is obvious that in the subacute forms therapeutic hopes remain. In addition to the various means of ministering to ease and comfort during the periods of suffering, phenacetin, antipyrin, hypodermic injections of morphia, judiciously employed, I am persuaded that the protracted administration of the iodids, as recommended by Huchard, is of value. I consider that the best for long-continued administration is the iodid of sodium, in 5 to 10 grain doses. In the earlier stages this may be combined with ammonia and other diffusible stimulants, in the later with small doses of arsenic (3 to 5 minims of Fowler's solution well diluted). I can only very briefly indicate the therapeutic measures to be taken; my chief desire has been to consider the clinical evidence and deduce certain principles upon which treatment, in my opinion, should be conducted.

I have come to the conclusion of my task with much regret for many sins of omission. I have been able to paint the pictures only with the large brush of the scene painter and not with that of the artist of miniatures. I am fully alive to my obligations to the pioneers and the great army of progressive medicine, yet in the course of my life I have learned the wisdom of the maxim, "Hasten slowly." I have seen so many so-called infallible systems of treatment rise and fall. Do not let us mistake the penultimate for the ultimate; apparent and varying improvement for real recovery. It is by patient care and by the adoption, not of one system but of all legitimate methods of treatment, judiciously applied, that we do our best for those under our care. There is no unerring system, but it is not a meaningless phrase when we say that our ruling principle shall be the gradual training of our patient to health, understanding by *health* the conditions indicated by the old Saxon word, "*uholth*," harmony of function associated with integrity of structure.

¹² Davies, Herbert and Arthur S.: "The Mechanism of the Circulation through Diseased Hearts." London: Lewis, 1889, p. 18.

ORIGINAL PAPERS.

A CASE OF MYXEDEMA.¹

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WHILE we are not yet in a position to state definitely what part the thyroid gland plays in the animal economy, we have, in the last decade, learned much regarding the phenomena to which aberration of its function, in excess or in deficiency, gives rise. Schiff² had noted as early as 1856 that extirpation of the thyroid gland was followed in dogs by death, and it was pointed out by Ord,³ in 1877, that the thyroid gland was altered in cases of myxedema. J. L. Reverdin,⁴ in 1882, called attention to the symptoms appearing in man following surgical removal of the thyroid gland, and Kocher,⁵ in the following year, described the same condition and suggested for it the name cachexia strumipriva. Kocher⁶ also practised transplantation of freshly excised goiter, but without success. In 1883 J. L. and A. Reverdin⁷ pointed out the similarity between the symptom-complex following extirpation of the thyroid gland and myxedema. Horsley⁸ was able, in 1884, to induce symptoms of myxedema in monkeys after ablation of the thyroid gland. Bircher,⁹ in 1889, transplanted apparently healthy thyroid tissue from a goiter into the abdominal cavity of a patient suffering from cachexia strumipriva, with great improvement. Eiselsberg¹⁰ in 1890 transplanted the thyroid gland in animals from one part of the body to another, and Horsley,¹¹ in the same year, suggested the grafting of sheep's thyroid in the treatment of myxedema. This suggestion was successfully acted upon soon afterward by Bettencourt and Serrano.¹² In the same year Vessale¹³ prevented the development in dogs of the phenomena following

¹ Read before the Philadelphia County Medical Society September 27, 1899.

² *Rev. méd. de la Suisse Romande*, 1884.

³ *Med. Chir. Trans.*, Vol. LXI.

⁴ *Rev. méd. de la Suisse Romande*, 1882, p. 539.

⁵ *Deutsches Archiv für Chirurgie*, B. XXIX., H. 2.

⁶ See Horsley: *Brit. Med. Jour.*, July 26, 1890, p. 20.

⁷ *Rev. méd. de la Suisse Romande*, April, May, June, 1883.

⁸ Brown Lectures, 1884.

⁹ *Samml. Klin. Vortr.*, No. 357.

¹⁰ *Ueber Tetanie in Anschlusse an Kropf-Operationen*, 1890.

¹¹ *Brit. Med. Jour.*, July 26, 1890, p. 201.

¹² *Semaine Méd.*, August 13, 1890.

¹³ *Riv. Sperim di Frenatria e di Med. leg.*, 1890, Vol. XIV., p. 439.

thyroidectomy by intravenous injection of an extract prepared from the removed organ, and in the following year Murray¹⁴ treated successfully a case of myxedema by hypodermic injection of a glycerin extract of thyroid gland from sheep. It was soon found that the same good results could be secured by administration, by the mouth, of the gland itself, or of an external prepared from it. Since this time, large numbers of cases of myxedema and cretinism have been treated successfully with thyroid extract. The effects induced are, however, not permanent, and they persist only so long as thyroid preparations are administered. For the effect to be maintained, the administration must be continued indefinitely, with discriminating variation in dose, and possibly occasional intermission. An active principle, thyriodin, has been isolated from the gland, and has been employed therapeutically, with satisfactory results. For practical purposes desiccated extracts are the most available, the physiologic dose for an adult being five grains administered from once to thrice daily.

There is no longer any reasonable doubt that the symptoms of myxedema are dependent upon the withdrawal of the influence of the thyroid gland through the agency of a hypothetic internal secretion. Myxedema may be looked upon as the antithesis of exophthalmic goiter, which, there is good reason to believe, is dependent upon hyperplasia and increased functional activity of the thyroid gland. Cases are on record in which exophthalmic goiter has undergone gradual transformation into myxedema—atrophy succeeding hypertrophy of the thyroid gland. There is further a close analogy between the symptoms of exophthalmic goiter and those of so-called thyroidism, a condition resulting from excessive ingestion of thyroid preparations.

Myxedema was first described by Gull¹⁵ in 1873, and subsequently by Ord¹⁶ in 1877, although in 1871 sporadic cretinism had been described by Fagge.¹⁷ Charcot¹⁸ reported cases in 1881, and proposed the name *cachexie pachydermique*. The disease may occur early in life, or late. The congenital or infantile variety is designated cretinism. The disease is more common in women than in men, in the proportion of about seven to one. The disproportion is much less pronounced early in life, perhaps as two to one. In some instances, an hereditary predisposition has been observed. The disease appears to be more common in cold countries than in warm, and in Europe than in America. In some localities it occurs endemically. As a rule the thyroid gland is reduced in size, although occasionally it is enlarged, though inactive. The disease is characterized by a solid edema, the face being moon-shaped, the hands spade-shaped, and fatty tumors are

¹⁴ *Brit. Med. Jour.*, October 10, 1891, p. 798.

¹⁵ *Clin. Soc. Trans.*, 1874, VII.

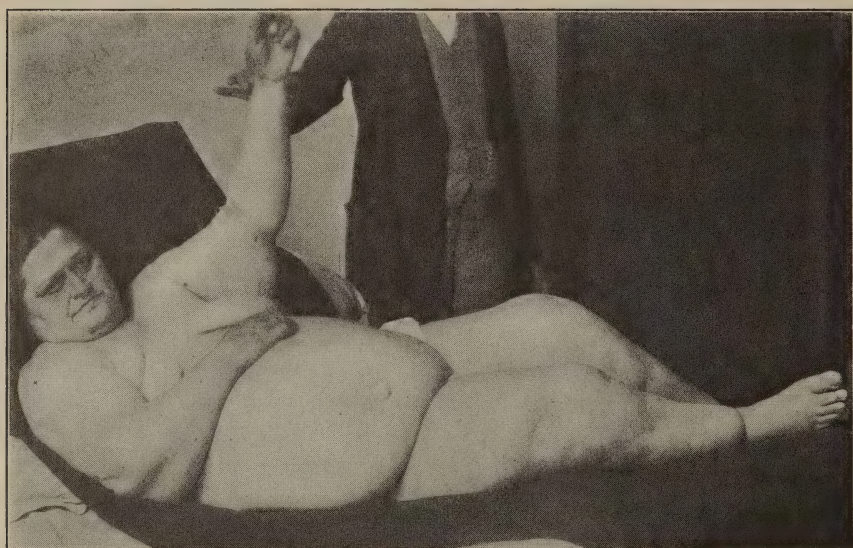
¹⁶ *Med. Chir. Trans.*, 1877, LXI.

¹⁷ *Med. Chir. Trans.*, LIV., p. 166.

¹⁸ *Gaz. des Hop.*, 1881, No. 10.

present in various situations. The skin is dry and rough; its secretion is diminished; the hair is scanty, coarse, and brittle, the nails are ridged, the teeth are carious. The temperature is subnormal, and patients are often unduly sensitive to cold. Mental impairment exists, and may assume the form of dullness or torpidity or deficiency. Insanity sometimes occurs. There is impaired mobility and muscular weakness. Anemia of varying degree is present as a rule, and in women menstrual disturbances are common.

Since the institution of thyroid treatment the prognosis has been most favorably modified, as the symptoms can be held in check by this means. In cretins the improvement, mental, physical and developmental, is



ADIPOSIIS DOLOROSA.

truly remarkable; in adults it is only less remarkable because of, and in proportion to, the approximation to maturity, both physiologic and anatomic.

There is little difficulty in diagnosis in typical cases. The edema of nephritis may cause the face to assume the characteristic moon-shaped appearance, and the remainder of the body to be swollen, but the swelling is not solid, and it pits on pressure, while the presence of albumin and tube-casts in the urine, of effusions into serous cavities and perhaps of changes in the retina, the previous history and absence of trophic and other tissue-changes, and of mental deficiency point to a renal origin for the symptoms. Obesity scarcely resembles myxedema, but the increased deposit of fat may give rise to an appearance not entirely unlike that resulting from the mucoid change

in the subcutaneous connective tissue. Nor is the resemblance closer on the part of the painful form of adiposis described by Dercum,¹⁹ and of which I have reported a case previously.²⁰

The accompanying photograph from this case will illustrate the gross differences between the two conditions. The pendulous masses and the other accumulations of fat in such cases may be much like those observed in myxedema, but the solid edema, the aberrations in development, and the mental changes, are usually wanting. It should, however, be borne in mind that there may be some fundamental relation between myxedema and the several varieties of morbid fat-deposition and fat-accumulation, for with the latter there may be associated atrophy of the thyroid gland, and in them also the administration of thyroid extract is often attended with striking therapeutic results.

Myxedema is not so common that the report of an isolated case would seem to be without interest.

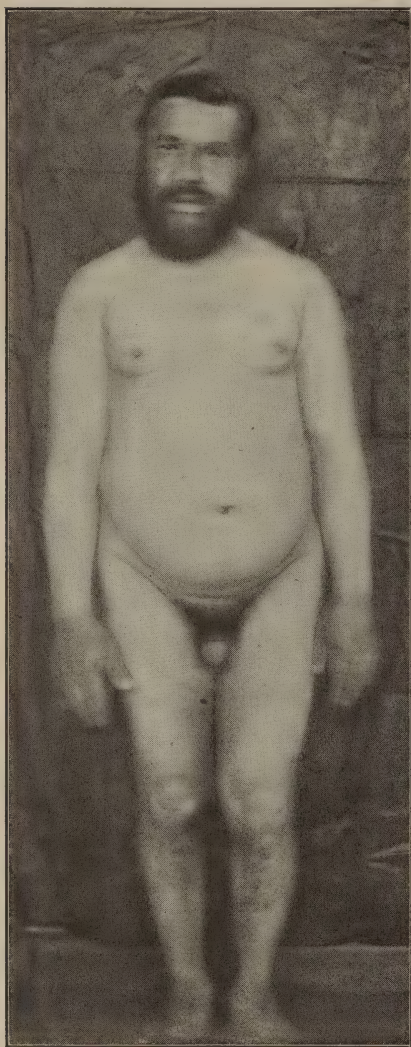
A. B., fifty years old, a native of Russia, presented himself at the Philadelphia Polyclinic, complaining of pain in the epigastrium, radiating to the hypochondria, and also of pain in the lumbar region, in the muscles of the extremities, and in the precordia. The epigastric distress was aggravated by the taking of food, which also induced nausea. The appetite was preserved, but the bowels were constipated. There was slight cough, with free expectoration of tenacious mucus. The appearance of the patient was striking and characteristic. It is well portrayed by the accompanying photographs.

The man was thick-set, and rather short in stature. His voice was hoarse, but he spoke with intelligence. His lips were thick, the lower somewhat everted. The tongue was exceedingly large, and well filled the mouth. The nose was large and broad, but the ears were of ordinary size. There were areas of circumscribed alopecia on the scalp, probably in consequence of previous favus. The hair presented no peculiarity. The thyroid gland was palpable. The hands were thick and rather broad than long; they could not be clenched. The circumference of the right metacarpus was 23.5 cm. and that of the left 22.5 cm. The mammary fat was excessive. There was impairment of the percussion note below the clavicle, but there was no other indication of pulmonary disease. The action of the heart was rhythmic and its sounds clear. A view of the larynx could not be obtained. The uvula and the palate were red and irritable. The nares were found fairly clear; the septum was thick, and there was a spur on the left side. There was little growth of hair in the axilla. Perspiration was free, perhaps unduly so. The patient complained of being always drowsy. He related that his parents had died at an advanced age, and a brother in convulsions. All of his six children were well. One had died. The man had done well at school, and was

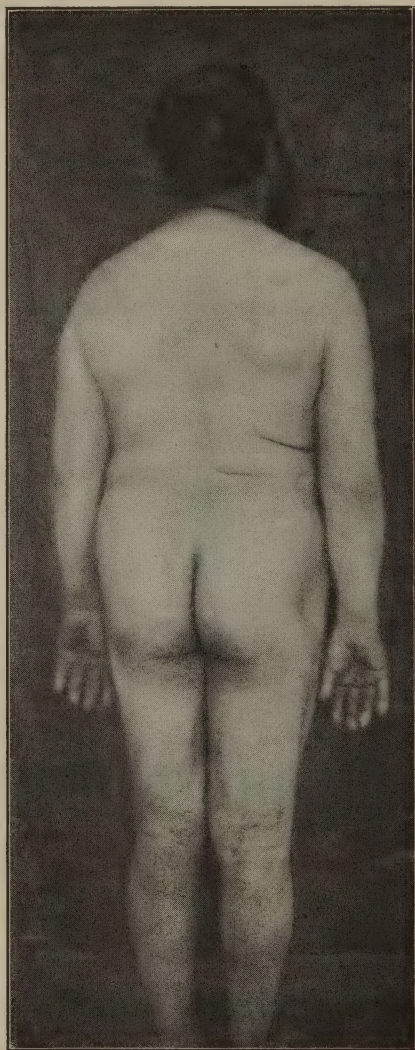
¹⁹ *Univ. Med. Mag.*, December, 1888, p. 140; *Amer. Jour. of the Med. Sciences*, 1892, p. 521.

²⁰ *Phila. Med. Jour.*, October 8, 1898; *Jour. of the Amer. Med. Assoc.*, November 12, 1898.

conscious of no personal peculiarity. He was given thyroid extract, five grains daily, and his lips, tongue, and hands diminished appreciably in size, but he was desultory in his attendance, so that a continuous effect could not



MYXEDEMA.



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be maintained. His weight, however, decreased in the course of seven weeks from 189 to 181¼ pounds. The circumference of the hands was found less on measurement, while their mobility was increased, so that it became possible to clench them.

HEMORRHAGIC DIATHESIS IN TYPHOID FEVER.

BY J. H. MUSSER, M.D.,

Professor of Clinical Medicine, University of Pennsylvania; Physician to the Philadelphia and Presbyterian Hospitals, etc.

AND

JOS. SAILER, M.D.,

Of Philadelphia.

THE following case, on account of the very grave character of the complication, and because of the existence, as discovered in the autopsy, of two interesting congenital anomalies, one of which at least contributed to the fatal result, has seemed worthy of being put upon record:

A. McC., male, white, nineteen years of age, was attacked by severe headache on the twenty-ninth of December. Two days later he had severe chills, nose-bleed, diarrhea, abdominal pain and also slight cough, but continued at work until the following Monday, three days later.

His previous and family history was negative, except for a tendency to become short of breath upon exertion.

He was admitted to Dr. Musser's ward at the Presbyterian Hospital on the second of January with a temperature of $101\frac{3}{4}^{\circ}$. There was a profuse roseolar eruption upon the back, and a number of spots upon the chest and abdomen. A few spots were also found upon the arms. There were some moist rales in both lungs, heard anteriorly as well as posteriorly. The spleen was not palpable. There was slight tympanites. The apex beat was strong, slightly diffuse, and situated just outside the nipple line in the fifth interspace. The dullness extended from the lower border of the fourth rib and the left sternal border. At the apex the first sound was greatly accentuated, and there was a short systolic and a long, soft diastolic murmur. The latter was also heard in the axillary line. The second sound was split in the third interspace and over the pulmonic cartilage.

The typhoid state was very well marked. The tongue was dry, brown and furred. There was considerable tremor of the hands. The pulse was of full volume, low tension and dicrotic. Throughout the course of the disease, the rate varied between 90 and 120 per minute. The condition of the heart remained about the same during the disease. A faint diastolic murmur was heard in the third interspace on the left, and toward the end all the sounds became somewhat fainter. A diagnosis was made of mitral obstruction, and perhaps slight aortic regurgitation, although the latter condition, in the absence of pulsus celer, and on account of the very slight enlargement of the heart, was considered doubtful.

On the tenth the patient complained of sore throat, the pharynx was red-dened, there was no membrane and the tonsils were not enlarged. No cultures were made, and the day following the mucous membrane appeared to be normal. On this date it was noted that a profuse eruption of spots had appeared. Until the fifteenth the course of the disease was favorable, the fever never reaching 104° and responding readily to sponges. On the fifteenth there was profuse epistaxis, oozing of blood from the gums and mucous membrane of the tongue, a profuse eruption of petechial spots, and a large ecchymosis into the right skin over the right shoulder. The pulse was weaker, the heart sounds faint, and there were some moist rales in both lungs. During the following night a considerable amount of blood was lost from the mouth. The tongue was swollen, cracked, and covered with densely adherent dry blood. The lips were also covered with caked blood, and were sore. There was hematuria, and the petechial eruption was more extensive. There was suggillation upon the chest, and considerable subcutaneous effusion into the skin of the right shoulder, left trochanter, and left scapula. These were greenish blue, swollen and very tender. As a result of stimulation the heart's action was stronger. The first sound at the apex was hollow and booming; a systolic murmur was heard in the fourth interspace, and a faint diastolic murmur in the third.

The next day, in spite of fresh lime juice, calcium chlorid, opium and ergot, the hemorrhage continued, blood being passed from the bladder and bowel, as well as from the nose and mouth. The subcutaneous effusions were becoming larger, the tongue was greatly swollen and very painful. The general condition of the patient continued to grow worse, and the swollen tongue interfered greatly with respiration. The pulse grew weaker, and death finally occurred from respiratory failure, just after midnight on the nineteenth. The Widal test had been reported positive on two occasions.

At the autopsy the following conditions were found: Both lungs were congested posteriorly, and the left contained some areas of catarrhal pneumonia. The foramen ovale was patulous. The left ventricle was greatly hypertrophied and the aortic ostium was guarded by only two semilunar valves, the anterior leaflet having been formed by the coalescence of the anterior and right leaflets. In the middle of the large sinus of Valsalva there was a ridge representing the incomplete division. The edges of both leaflets were greatly thickened. The aorta appeared to be narrower than normal. The wall was perfectly elastic, and there was no base of atheroma.

The spleen was slightly enlarged and softened. The kidneys showed moderate cloudy swelling, and the pelves were filled with blood.

The gastro-intestinal tract to within four feet of the ileo-cecal valve was apparently normal. From this point the Peyer's patches began to show ulceration, and a single huge ulcerated mass involved the whole of the lower end of the ileum and the ileo-cecal valve. A Meckel's diverticulum about 6"

long and of about the same diameter in the small intestine arose from the ileum about three feet above the valve, opposite the mesenteric attachment, and contained a typical oval typhoid ulcer. The mucous membrane of the appendix was thickened and pigmented, and showed some superficial adhesions. The bladder contained some hemorrhagic areas, and ecchymoses were found in all the serous membranes. The thymus gland was persistent. The mucous membrane of the larynx was edematous, and over the vocal cords were seen some shallow ulcers with thickened walls. Unfortunately, neither the visiting nor resident pathologist could be present at the autopsy, which was performed by the resident physician, Dr. Apgar, in the presence of one of us, and cultures could not be taken from the organs.

The association of typhoid fever with the hemorrhagic diathesis or else the development of this diathesis in the course of this disease is a condition that, although uncommon, has been noted by many writers. But the majority of these have dismissed the subject with a most cursory mention. Chantemesoe, in the *Traité de Médecine*, speaks of hemorrhagic typhoid or a grave form of the disease, usually fatal, and characterized by subcutaneous hemorrhage, usually about the joints, and bleeding from the mucous membranes, but does not report any specific case. Anders barely mentions the condition, and implies that the hemorrhagic diathesis must necessarily pre-exist. Wilson, in his article in Loomis's System, fails to mention this condition, as does Pepper in his own text book. Osler has seen but one case which recovered. He has observed a petechial condition in five of 389 cases. But few cases of this condition appear to have been reported in recent years. Nicholls (*Montreal Medical Journal*, June, 1896) has reported two cases, characterized by a petechial eruption and effusions about the joints. Openchowski (*Klinische Therapeutische Wochenschrift*, January 2, 1898) has observed a case of hemorrhage from the mucous membranes that was cured by an attack of croupous pneumonia.

Treatment of Eclampsia. Parisot (*Rev. Internat. de Med. et de Chir.*, March 25, 1899) states that the treatment of eclampsia aims to limit the production of toxins in the organism and to facilitate their elimination, when formed, through the skin, through the intestinal mucous membrane, and especially through the kidneys. Milk is the best food, as it produces little fermentation, and favors diuresis. Insoluble antiseptics are given, salol, naphthol, benzonaphthol, etc., but, according to Deschmaeker, the best intestinal antiseptic is saccharin in divided doses, amounting to 1 or 2 gms. (15 to 30 grs.) a day. Purgatives are more to be relied upon than are intestinal antiseptics. Diuretic drinks, warm or vapor baths to increase the action of the skin, and inhalations of oxygen to increase the rapidity of combustion have their uses. Blood-letting is advisable if an attack is imminent. If there are nervous symptoms 15 to 30 grs. of chloral and the yolk of an egg in 3 oz. of milk should be injected into the rectum. If this fails to quiet the patient, chloroform may be administered.—*Med. News*.

ALTITUDE AND HEART DISEASE.¹

BY DR. HENRY SEWALL,
of Denver, Col.

ALL discussions as to the effect of altitude in heart disease are based on theories of the mechanics of the circulation which are not yet firmly established. So far from a moderate altitude, as that of Denver about one mile above sea-level, being a disadvantage in some cases of valvular heart disease, it has seemed to me to be distinctly beneficial. This conclusion is based upon the clinical observation of diseased hearts and strengthened by the changes occurring in weak but structurally normal hearts recently removed to Denver from lower levels. In these cases, usually sufferers from pulmonary tuberculosis, there is manifested soon after arrival, in my experience, more or less cardiac disturbance attributable to overstrain of the right side of the heart. This is the period when muscular exercise is apt to work greatest injury to the patient. In cases that do well, the signs of heart strain pass off after a few days or weeks. The phenomenon is readily explained if we admit that with removal to higher altitude the aspirating power of the thorax is increased by augmentation of the depth and frequency of inspiratory movement. In the well nourished heart there probably occurs a compensatory hypertrophy of the right side, which enables it to discharge easily the increased intake of blood and in turn subject the lungs to more vigorous irrigation.

In cases of mitral stenosis there is already a characteristic excessive burden thrown upon the right heart, and from the theoretical standpoint it would seem bad practice to advise an environment in which the flow of blood into the right ventricle would be accelerated. On recalling those cases of heart disease that I have seen go to ground in Denver, without sufficient reason, it has been found that the signs of mitral stenosis characterized the greater number.

On the other hand, it seems clear that the condition of cardiac nutrition is, in the end, the factor on which the heart must depend for its powers of compensation, and the means by which an improvement in this nutrition is to be gained are more to be sought than the conditions which lead to increase of burden on the heart are to be feared. Physiologic experiment has demonstrated that the heart is almost unique in its tolerance of mechanical injury, but with defective metabolism its powers begin at once to fail.

It is stated on good authority that a sudden fall in the specific gravity of the blood is the immediate precursor of loss of compensation in heart disease. The anemia in this condition is one of its characteristic features. The literature supporting the view that high altitudes cause an increase in

¹ Remarks made during the discussion of a paper by Dr. R. H. Babcock, on "Altitude and Heart Disease," before the American Climatological Association, at its meeting in New York, in June, 1899.

the red corpuscles of the blood is well known. My colleague, Dr. W. H. Bergtold, has made a careful comparative study of the specific gravity of the blood, and finds that the specific gravity is characteristically higher in Denver than at sea-level. An influence of residence in moderately high altitudes which seems to me of unrivalled importance, if somewhat mysterious in its mode of action, is that manifested in the psychical attitude. The sense of *well-being*, physical and mental is apt to be improved. No one will dispute the importance of the psychical factor in heart disease. The facts seem to me to warrant the conclusion that moderately high altitudes favorably affect cardiac metabolism but throw on the heart, especially the right heart, an increase of burden. So long as the nutritive powers of the heart-tissue are normal, such altitudes are favorable, because, while not overburdening the heart, they facilitate through it the nutritive changes in other vital tissues. But so soon as compensation fails from defects which can be attributed to retrogression of cardiac tissue, the dangers of the increase of the physiologic burdens incident to high altitude far overbalance the benefits of its stimulus.

A female patient with marked mitral stenosis, about a year ago, came to Denver from Chicago, where she had been under the careful observation of Dr. Babcock. I questioned her carefully as to the effects of different altitudes upon her condition. She said she could stand Colorado Springs, with its altitude of 6,000 feet, with only fair comfort. In Denver, 5,280 feet, she was just as comfortable as in Chicago, and better than in Los Angeles. But in Cripple Creek, 9,300 feet, she at once began to feel miserable, and at the end of a week would break down completely. Two months ago I saw the patient through an attack which had come upon her in Cripple Creek. She soon after returned to her normal condition, in which she was able to take a fair amount of exercise with comparative comfort.

The Cultivation of the Bacillus Lepræ. At a recent meeting of the National Academy of Medicine of Bogota, Dr. Carrasquilla asserted that he had successfully cultivated the bacillus leprae on sloped solidified human serum and on beef bouillon prepared according to the method of Thoinot and Masselin. The bacillus was then cultivated from serum to serum, and from bouillon to bouillon, pure cultures being always obtained. Dr. Carrasquilla further states that he observed the bacillus in motion in 2 stages of its development—as long, slender bacilli, which move in an undulatory manner; and as short, coarse, almost elliptical bodies moving rapidly in a straight line. In the latter he fancies he has observed flagella, but he is not positive as to this. His results do not entirely accord with those obtained by Prof. Spronck, of Utrecht, who has also claimed to have cultivated Hansen's bacillus. Prof. Campana, of Rome, has also convinced himself that he has successfully cultivated the bacillus leprae. These experiments require confirmation and extended observation before they can be accepted as absolute.—*Brit. Med. Jour.*

TALKS TO GENERAL PRACTITIONERS.

TREATMENT OF SYPHILIS.

(Continued.)

BY J. D. THOMAS, M.D.,

Professor of Genito-Urinary Diseases, Western Pennsylvania Medical College;
Genito-Urinary Surgeon to the South-Side Hospital, Pittsburg, etc.

SOMETIMES when too much mercury has been administered, its deleterious effects may be mistaken for ravages of the disease. In a case seen in consultation where mercury had been given in increasing doses to overcome ulceration of the gums and fauces, accompanied, at times, with dangerous bleeding, all of which were presumed to be due to the patient's syphilis, I recognized at once the true cause, advised immediate withdrawal of the mercury, and suggested instead an iron tonic internally and local cleansing with peroxid of hydrogen, followed by insufflation of boric acid. There was no further bleeding, and healing rapidly followed.

Hypodermatic injection of mercury as a routine practice in syphilis is not practicable. It is painful, and not free from danger, as we infer from some published cases; although, in my own cases so treated, no untoward accidents occurred. The painfulness of the treatment precludes its use with our private patients, and dispensary patients remain away when so treated. It may be practiced with advantage, however, in the army, in insane asylums, exceptionally in hospital practice and with patients who have the chancre on exposed surfaces. The preparations I have used were the bichlorid of mercury in solution, and calomel in emulsion—one-sixth of a grain of the former every other day and one grain of the latter once a week. These injections, especially the insoluble ones, leave an induration that persists, in some cases, as long as three weeks. The injections were made into the buttocks and in the tissues within the angle of the scapula.

During the latter part of the second year of the disease, as well as in the third year (the declining stage), it is well to give iodid of potash in combination, or alternating, with the mercurials. At this time the iodid should be given in small doses—five or ten grains three times a day. The potash acts as a cleaner-up, as it were.

Mucous patches about the mouth are a very annoying feature frequently met with. To prevent these the entire buccal cavity should be kept perfectly clean, and tobacco, in all forms, prohibited. They should be touched every second or third day with a strong solution of nitrate of silver, and, if

rebellious, occasionally with acid nitrate of mercury. As a gargle, lotio nigra or a solution of chlorate of potash will be found useful.

In a certain number of cases the sequelar or tertiary stage follows. The lesions of this period are due to an unremoved infiltrate, or to an exaggerated hypertrophy of this unremoved infiltrate, assuming the form of new growths, embryonic tissue or chronic inflammations. The peculiarity of the lesions at this time is that they are manifested, as a rule, in the deeper structures—connective tissue, arteries, bones, etc. The brain and spinal cord lesions of syphilis are usually degenerations secondary to arterial disease—endarteritis, thrombosis and embolism—or to meningeal gummata. A veritable neuritis is exceptional. We find tertiary syphilis, as a rule, in the dissipated, in the untreated and in the insufficiently treated.

In the treatment of primary and secondary syphilis the aim of the physician should be the prevention of sequelae. Primary and secondary syphilis are not dangerous to the individual himself—they are dangerous to others. Tertiary lesions are dangerous to the patient himself—not to others. Tertiary lesions are followed by scar tissue. A broken-down or absorbed gumma upon the leg will leave a scar, which in nowise compromises the function of the limb; but let a scar occur upon or within the brain or spinal cord, and we have a condition that is hopelessly irremediable, for it has damaged organs that are vital to the functions of the whole being. Medicine will remove the disease, but not the scar tissue. A fact not generally noticed, but one that I have observed, is that where we have what is called nerve syphilis we are not apt to have gross external manifestations in the form of ulcers, gummata or tubercles, and if we fail to get a history of the initial lesion the case is quite obscure. Again, we meet with cases where the surface lesions leave no doubt as to the diagnosis, but brain and cord symptoms are absolutely wanting.

The treatment for the tertiary period is iodid of potash, and it must be given in doses adequate to cause removal of the new growth—absorption of the exudate. In some cases thirty grains in the twenty-four hours will suffice, while in others three hundred or more grains will be required in the same space of time. These large doses do not derange the stomach, but generally improve the appetite and induce a feeling of well being. To give small doses when large ones are demanded is a fatal error. In the sequelar stage some place too much dependence upon mercury. As useful as mercury may be at times to bring about fatty degeneration or softening of indurated tissues, thus producing a condition for the more efficient action of the iodid, the latter is the *sine qua non*.

The following case, that had been under the care of a regular physician for one year, shows the result of inefficient medication. Had the lesions been central it would have been fatal. From notes:

J. T. acquired syphilis eight years ago; took treatment for a fraction

of a year. Until one year ago remained well, when he noticed some enlargement of the glands in the left groin. Although he then placed himself under the care of a physician, with whom he has remained until now, he continued getting worse. At the present time, has twelve broken down gummata in the left groin and inner aspect of the thigh on the same side. Has also one broken down gummatous gland in the right groin. The cavities vary in size from ones in which an English walnut might be placed to ones in which a pea might be inserted; some assume the form of rhagades. The patient was placed (two months ago) upon increasing doses of iodid of potash, and in *one week* the destructive processes had not only ceased, but the wounds were assuming a healthy appearance. At the present time he is taking fifty grains three times a day and all the wounds have healed. A wash of *lotio nigra* was used locally until the ulcers healed.

In prescribing the iodid it is better to give it in a saturated solution in *distilled* water; one drop of which represents one grain. I find that 90 per cent. of patients take this readily when well diluted with water. With the occasional patient who cannot take it in plain water, it may be given in essence of pepsin, coffee or milk.

In addition to medical treatment, the hygienic must not be neglected. Temperance in all things must be insisted upon.

Precocious syphilis is that form that is occasionally met with where lesions simulating the sequelar ones may appear as early as the fifth or sixth month after infection. We find it oftener in the female than in the male. Such cases are always troublesome, and hence the prognosis is much more unfavorable than in the ordinary case. In these cases the iodid must be administered early in addition to the mercury. A tonic treatment must also be instituted early. Sending these patients to the hot springs would be advisable.

PUS AND ITS TREATMENT.

BY EDMUND W. HOLMES, M.D.,

Demonstrator of Anatomy, University of Pennsylvania, etc.

THE older practitioners considered pus to have been derived from the endothelial lining of the blood-vessels, from leucocytes, or from the connective tissue, mixed with cellular and intercellular debris; a slight irritation inducing inflammatory exudation and congestion; greater irritation, inflammatory lymph; still greater, pus; and even greater, gangrene. It was also considered possible for these conditions to result from constitutional conditions, with or without external agencies. The germ theory has changed

this, so that pus-producing organisms by contact, and pus-producing organisms by absorption and distribution throughout the body by the blood and lymph channels are now regarded as the primal cause. In surgical work pus-collections are a source of dismay to the surgeon, and, if post-operative, a reflection upon his manners and customs.

Its presence may or may not produce grave constitutional symptoms. It may, on the one hand, evoke a chill, fever and sweat, with the regularity of an intermittent, headache, aching limbs and lassitude, like malaria; or, on the other hand, being surrounded by a thicker area of lympho-cellular infiltration, considerable collections may produce no symptoms until opened, this being formerly attributed to the admission of air. The profession do not sufficiently appreciate that intermittency is a nervous phenomenon, from an impression upon the nervous system, and therefore accompanying solar neuralgias, hepatic derangements, hematuria, hay-fever, and absorption of pus, as well as from the absorption of the plasmodium malariae.

Therefore, no more serious lesson can be impressed upon young and old alike, than the fact that, at least in these latitudes, the diagnosis of malaria or intermittent fever should not be made till the possibility of these other conditions, and particularly the presence of pus, has been eliminated. On the other hand, being surrounded by an inflammatory zone, choking the lymph channels, large masses of pus may exist unnoticed, until their evacuation relieves pressure, opens up the lymph canals, and then constitutional symptoms will quickly follow. In fact, it may be remarked, in passing, that the main difference between the diffused suppuration and the localized collection of pus or so called "abscess" depends upon whether the organism is sufficiently active or not to break down all barriers and diffuse itself amongst the tissues without limitation.

The violence of the constitutional phenomena depend, also, upon the virulence of the bacteria and their toxins, and this largely upon the age of the micro-organism, almost with the certainty of an actuary's tabulation.

Thus, gonorrhea from a fresh focus will come on quickly (inside of four days) and work most violently, while an old gonorrhea will only inflame a new urethra in the course of ten to fourteen days, and induce a subacute condition with a thin, whitish discharge. The virulence of the gonococcus infection per vaginam, as a rule, by the time it reaches the tubes is at a minimum; with the tubercle bacillus the processes are so slow, its pyogenic function is but weak and it needs a double or a reinfection to produce true pus. For these reasons surgeons find in intra-abdominal operations that the duration of the pus condition is an important determining factor in the subsequent onset of, or escape from, a general peritonitis, and in times of uncertainty an element in a "waiting" diagnosis. The idea of youth—

vitality of the pus organism—is also of value to the busy surgeon. We know the prejudice against those who are in the dissecting-room, yet the ptomaines of well-injected cadavers are as nothing compared to the virulence of fresh young pus-producing bacteria, so that an operator who has handled a case of virulent streptococcic infection, in addition to the usual antiseptic washings, should not allow himself to touch another patient for forty-eight hours, so as to allow time for the microbes to die from exposure and old age. In the same line, operative wounds, the most virulent, are manifest inside of forty-eight hours, while those occurring after the fourth day usually run a mild course. The treatment depends upon a thorough appreciation of the modern pathology. Thorough evacuation and drainage are the chief things. A false security is engendered by too great dependence upon antiseptic fluids—which, when strong enough to be really bactericidal, will destroy the tissues. Most of the antiseptics in the strength usually employed are only inhibitive. So iodoform, antipyrin, and bismuth are drying powders absorbing the blood serum which is nutritive to these low-type micro-organisms, and peroxid of hydrogen finds its best use in over-distending the crevices, being thus far a cleansing agent.

An abscess or diffused suppuration being present, free evacuation is the first indication. We are sorry to say that many of the profession seem to be still of the opinion that pus (unlike other fluids) will run up-hill. Cold abscesses are no exception. We have yet to see any good come from the use of iodoform and glycerin, either by direct injection or by cataphoresis. If very large they may be drawn off gradually with the aspirator. Sometimes, as mentioned above, constitutional symptoms result from the relief of pressure upon the absorbents; but, in any event, we protest against the let-alone policy. We open to get rid of the mass of the pus, which is a foreign body and an irritant, to get just so many micro-organisms out, to clean off the raw absorbent surface, to remove ligatures and sutures and spicules of bone, if present, and to prevent, if possible, the formation of new foci elsewhere by reinfection. Having evacuated and washed out thoroughly and secured free drainage of the serum, firm pressure with a wet bichlorid dressing and the firm application of a roller bandage to bring the sides of the abscess cavity together will secure the best results. As to washing out the abscess, a weak solution of tincture of iodine is perhaps the best, with a suspicion that the usual solutions of bichlorid of mercury, permanganate of potash, carbolic acid, peroxid of hydrogen, or of sterile water are about of equal value. Thorough cleansing, forcibly enough to distend the cavity, with curetment to remove unhealthy granulations, if necessary, drainage at the most dependent parts, asepsis and equable bandage pressure are of the greatest value.

THE TREATMENT OF CHRONIC ASTHENIC GASTRITIS
(ORDINARY CHRONIC GASTRIC CATARRH).¹

BY BOARDMAN REED, M.D.,

Philadelphia, Pa.

Treatment—Dietetic and Hygienic Generally.—As in chronic acid gastritis, so in the more familiar form of chronic gastric catarrh with depression of the glandular function, you will need to guard the patient always against foods and drinks of a decidedly irritating character, as well as the more fermentable ones, which tend to aggravate. In the asthenic form, however, the necessity of keeping to the blandest articles is very much less. The milder condiments can sometimes be taken with advantage and small doses of the sour wines may be well borne in a certain proportion of cases. But a free use of any of these things will surely be injurious.

In no disease is it more emphatically true that the patient, not the disease, needs to be treated. In arranging the diet of patients with catarrh of the stomach, hard and fast rules can rarely be applied with safety. Each case by itself needs to be closely watched and the secretions and excretions, especially the gastric juice and urine, should be carefully studied. If you attempt to follow in all your cases the hobbyists who advise an exclusive milk diet, the use of meat and hot water only, or a reliance on cereals, vegetables, fruits, nuts, etc. (the so-called natural diet), you will often be disappointed, particularly with the last mentioned group of foods.

There are comparatively few positive indications and contraindications. The articles that most frequently disagree markedly are those containing cane sugar, all forms of fresh yeast bread, rolls, etc., and the beers and malt liquors generally because of their proneness to rapid fermentation. Vinegar, pickles, cabbage, green corn, beans, shell fish, fried things and all very coarse, tough or hard substances which cannot be finely divided by the teeth and well masticated, are, as a rule, unsuited to these cases. Very much will depend upon the stage of the disease, the state of the nerve centers, and the strength of the muscular system; also upon the other treatment. For example, when a patient can spend some hours daily in rowing, pulley exercises, or other gymnastics for the trunk muscles, horseback riding, walking or bicycling, and have in addition sponge baths and lavage as well as abdominal massage, a very much more liberal variety of diet can be allowed than would be practicable if there should be so little vigor of the muscles, nerves and circulation as to compel the adoption for a time of the rest treatment.

Generally, I enjoin the avoidance of all the objectionable articles above mentioned, as well as, in bad cases, most of the vegetables, except in the purée form; but I have seen exceptional cases in which there was a very feeble heart, marked malnutrition on account of associated intestinal catarrh, and

¹ Read before the Northwestern Medical Society of Philadelphia, October 3, 1899.

an intolerance of the stomach tube, so that the usual course of treatment had to be departed from in various ways. Both lavage and the customary restrictions in the diet, including a denial of sweets, were here followed by increased emaciation and debility. Therefore, the most nutritious foods were selected, and, besides much milk, cream, eggs, meat juice, chopped beef, purées and the finer cereals, some sugar even had to be allowed in order to maintain nutrition, while massage and the Nauheim resisted movements, with some cautious medication, were relied upon mainly in the way of treatment.

In general the best course as to diet is to nourish as fully as possible without risking excessive fermentation and without irritating or overburdening the digestive organs, bearing in mind that at the best much of the food is lost through the fermentative and putrefactive processes in these cases.

Three to five moderate or small meals a day are best in most cases, especially when the motility of the stomach is weak. Exceptionally two meals are better. They should be eaten when the patient is free from worry and fatigue, and in as cheerful company as possible. Above all, it is necessary that plenty of time should be taken for meals, the food being most thoroughly masticated and insalivated.

As to the kind and quantity of liquid to be taken at meals, no inflexible rule can be made. Strong coffee and tea are drugs rather than foods, and are likely to do harm, at least in the end, though they are sometimes tolerated well for a time. Chocolate is often even more indigestible. The lighter forms of cocoa, especially an infusion of cocoa shells, more frequently agree. Cereal coffees, with good cream or milk, suit well in most cases and a mixture of milk and warm water flavored to the taste may generally be permitted. Claret and water or other light wine may prove safe, and even useful, when there is no uric acid excess or very high acidity in the urine. The amount of any fluid taken with the meal must be strictly limited, especially when the stomach is dilated or has weak expulsive power. More than half a pint is not usually desirable.

The general hygienic requirements are in the main those which every delicate person should observe. Indispensable are an abundance of pure outdoor air and sunshine. Therefore the seashore, mountains, or country will be the best place of residence—much better than any crowded city. Fatiguing in-door or sedentary occupations and excesses of every kind should be avoided and there should be plenty of sleep in large, well-ventilated rooms. Exercise out of doors is really essential to a cure, and must be taken by all except in the weakest cases.

Mechanical Forms of Treatment.—Lavage is probably the most useful of all the curative measures. When the amount of mucus and germ infection are great, it should be done every day (Riegel says twice a day), preferably in the morning before breakfast. Plain, sterilized warm water will often answer well enough, but the addition of table salt, two teaspoonfuls

to the quart, will render it more efficacious. Drinking a pint or more of warm water, followed by vigorous contractions of the diaphragm and abdominal muscles, with the patient in different postures as hitherto described, so as to detach adherent mucus from the walls of the stomach, is a most helpful preliminary to the washing-out process. After passing one or two quarts of salt solution into and out of the stomach, a solution of resorcin or of alum, half a teaspoonful to the quart, or of nitrate of silver, five grains to the pint, may be introduced and quickly withdrawn in the more stubborn cases with advantage. The silver nitrate should be followed by a solution of common salt to prevent any possible danger. Dilute HCl, a dram or dram and a half to the quart, has worked well in some cases. A large number of other astringent and antiseptic drugs has been recommended for use in the same way and one will sometimes succeed when another has failed. A safe rule will be to employ as a maximum amount at one time not more than ten times the usual medicinal dose of the drug; dissolve this in at least a quart of water and then remove it promptly and completely. But it will be best to begin always with a much weaker solution.

Stomach washing should not be done too often (rarely oftener than once a day) or persevered with too long. As soon as the mucus lessens markedly, it can be limited to thrice or even twice a week, and when none at all is found, it is better to repeat it once a week for a few weeks longer. Even if mucus is found which has come from the nasopharynx or esophagus, as often happens, it will be desirable to cleanse it away once or twice a week until the local catarrhal process above can be cured, since otherwise its presence facilitates the rapid multiplication of bacteria in the stomach, and thus keeps this organ infected, besides doubtless favoring the development of catarrhal inflammation in it.

In the comparatively rare cases in which lavage cannot be practiced, something in the way of cleansing the stomach can be accomplished by having the patient drink two glasses of warm water several times a day an hour before meals with the view of washing the mucus downward. This cannot be safely done, however, in dilatation or marked motor insufficiency of the stomach, since in such cases the viscus does not readily empty itself and the increased contents would only further embarrass it. In the majority of cases of chronic gastric catarrh with a deficiency of HCl, the motor power of the organ is not much impaired, at least in the earlier stages; but at the best the warm water drinking is much less efficient than lavage, since it only carries the mucus and its contained bacteria on into the intestines, from which they are by no means always promptly expelled.

In Germany the saline waters of Homburg, Kissingen and Wiesbaden, especially, are used in a similar way; but my observations while at Homburg recently did not impress me very favorably with the value of the routine use of such waters in gastric catarrh. Either aggravation of the symptoms or disagreement in some way was not seldom noticed. The addition of salt or

of salt and soda together to the warm water has been also advised, but a free use of these remedies internally would not be nearly as safe as lavage.

In connection with diet and lavage, skilled massage of the abdomen is as potent for good in this form of gastritis as it is for harm in the acid form and in simple hyperchlorhydria. One of the many good results of massage of this region is a strengthening of the abdominal muscles as well as the muscular walls of its contained organs. The glandular function can also be powerfully stimulated thereby.

These objects can also be promoted by various special exercises and forms of gymnastics. Rowing is one of the best of these, and an excellent substitute is the use of pulleys, especially those made with elastic rubber cords, which afford a yielding resistance. There are also numerous bendings and twistings of the body which do not require apparatus of any kind and yet are very useful in developing the trunk muscles and the muscular walls of the abdominal viscera. They are described and pictured in works on physical culture. Most out-door sports, especially golf and tennis, are helpful in the same direction, and it should be borne in mind that in proportion as the muscles—especially those of the abdomen—are developed, all the atonic forms of indigestion, including gastric catarrh, become milder and more manageable, provided always a proper diet and other hygienic requirements are observed.

Electricity is less useful in this disease than in acid gastric catarrh, but when asthenic catarrh of the stomach is complicated with dilatation, as in many of the severer cases, intra-gastric faradization with the ordinary current from a coarse coil and with slow interruptions can do great good. Combined with very careful diet helped out by rectal feeding, and with regular lavage and massage, I have seen it rescue cases from the brink of the grave. This procedure was fully discussed in my talk on the treatment of acid gastric catarrh in the September number of the *INTERNATIONAL MEDICAL MAGAZINE*, and an illustration was there given of the intragastric electrode as modified by myself.

Medicinal Treatment.—Drugs internally are much less useful here than the agencies already described. Laxatives need often to be prescribed, though the hygienic measures and mechanical forms of treatment will often overcome the constipation. It is indispensable that there should be regular and complete evacuations of the bowels. Hydrochloric acid and pepsin in moderate, or sometimes even large, doses are usually important adjuvants in not too advanced cases, and may be of marked palliative value, even in the stage of atrophy. The manner of using these and reports of cases illustrating it will be found in a paper of mine presented to the American Medical Association in June, 1898, and published in the *INTERNATIONAL MEDICAL MAGAZINE* for October of the same year. Nitrate of silver, one-quarter grain, combined with five to ten grain doses of bismuth, may occasionally do good, and, when the patient has to forego the advantages of

lavage, a little help toward lessening the fermentation can often be obtained from antiseptic drugs, of which one of the most efficient and least hurtful, if not pushed too long, is carbolic acid in one to two minim doses after meals, given with glycerin and guarded with spirits of chloroform, compound tincture of cardamon and peppermint to disguise its taste and smell.

Resorcin in two to five grain doses and sulpho-carbolate of zinc in about the same, have been much vaunted and will sometimes lessen the fermentation, but in my experience they have been rather disappointing.

The nausea is best controlled by diet and lavage, but when the latter is impracticable, minute doses of calomel and ipecac will often afford relief. Bismuth and carbolic acid well flavored in a mixture as follows have often served me well in such cases:

Bism. subnit.,	3i
Glycerit. ac. carbol.,	f3ss
Sps. chloroformi,	
Tr. cardam. com.,	aa f3iss
Aq. menth. pip., qs. ad.,	f3ii

M. Sig.: Teaspoonful in water or lime water every two hours till relieved.

The failure of appetite is usually best overcome by lavage and the administration of pepsin and HCl, but in stubborn cases may sometimes be helped by tincture of nux vomica, gentian, quassia or columbo, and the Germans recommend very strongly condurango. I have recently seen the appetite and digestion both improved by five-grain doses of orexin tannate, taken an hour before meals. This remedy seems to increase the secretion of HCl.

To sum up: By far the most effective single method of treatment is lavage, which the majority of patients soon learn to tolerate without inconvenience, unless there coexists serious disease of the heart or blood-vessels. There are a few other contraindications which have been detailed elsewhere. Next comes diet. Third in the order of efficacy may be placed the copious drinking of warm water to wash the mucus downward, when the motor power of the stomach is good enough to render this safe. In the cases complicated with much motor insufficiency and still more with pronounced dilatation, intragastric faradization must take the third place, and sometimes, indeed, it can accomplish even more than lavage, though both are here often indispensable. Massage and special gymnastics should rank at least as high as fourth in curative power, and drugs internally administered are least effective of all, except to combat special symptoms.

Naturally, the combination of all the more valuable agencies, including especially lavage, diet, massage and gymnastics, offer the most promise of speedy cure, and spending several hours daily in the open air and sunshine in some healthful climate must in all cases contribute largely to effect that result.

SELECTION.

CORRECTION IN LATERAL CURVATURE.¹

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AND

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Boston.

As lateral curvature is in the main a vice of position and attitude, the treatment is directed chiefly toward the correction of faulty position and attitude. This treatment necessarily depends upon the pathological conditions, which vary at the different stages of development and severity of the affection, and these variations may be described as follows:

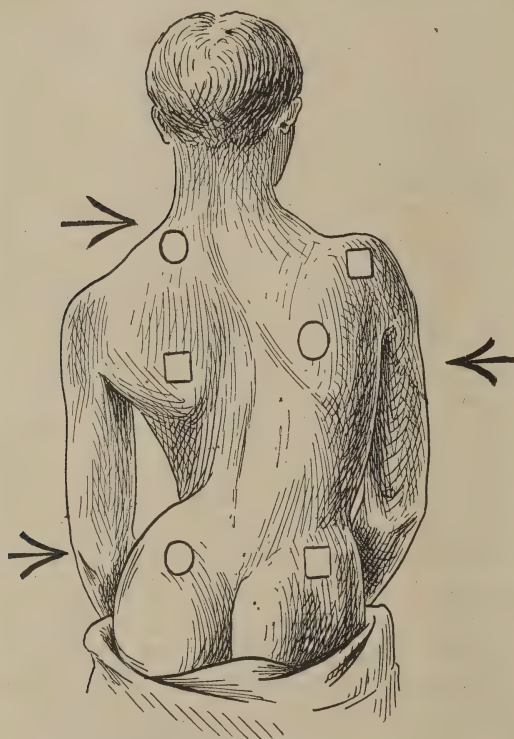


FIG. I. Indicating points of pressure, the square marks pressure in front and the round marks pressure behind.

attitude. This treatment necessarily depends upon the pathological conditions, which vary at the different stages of development and severity of the affection, and these variations may be described as follows:

(1) Faulty attitudes with absolute flexibility of the spine, and without structural changes of ligaments, cartilage or bone.

(2) A curved position of the spine with flexibility, except to a limited degree in certain portions where the normal flexibility is checked by slight structural alterations of muscles, ligaments, or cartilage.

(3) Curves with limited flexibility of the spine, and with structural changes of the ligaments and cartilages.

(4) Stiffness of the spine, the curve being fixed by structural changes in the ligaments, cartilages and bone.

When individuals have attained their growth, and there is evidence of marked bony change, treatment must necessarily be palliative, but in individuals that have not reached full growth, even if structural changes are present, treatment can be expected to be of service in proportion to the

* We are indebted to the courtesy of the publishers of the *Boston Medical and Surgical Journal* for the use of the illustrations in this paper. [Ed.]

amount of resistance to correction from the shape and structure of the bones.

The treatment in the first and second class would necessarily be largely gymnastic. In the second class the treatment should consist of gymnastics, supplemented by the use of measures for the increase of the flexibility of the spine, that is, the stretching of shortened, contracted ligaments. These methods of treatment have already been fully discussed in previous papers on the subject. In the third class of cases, where resistance and flexibility of the spine exist, owing to firm structural changes, treatment by gymnastics and flexibility exercises will not be sufficient, and for these cases mechanical measures have always been attempted. They have, however, never been thoroughly successful as corrective measures, largely owing to the mechanical difficulty that is encountered. The important problem, therefore, before the orthopedic surgeon, is the selection of the best possible means of exerting pressure directly upon the projecting positions of the trunk.



FIG. II. Jacket applied.

The large number and variety of corsets that have been devised, show the need of some method of treatment of the sort, but the great number of appliances used also indicate the lack of serviceableness and defects of most of them. It was supposed that the treatment by plaster jackets suggested by Sayre would be corrective, but the subsequent experience has shown that

although this method is of value in caries of the spine, its value is considerably less in lateral than in anteroposterior curves from caries. The reason of this is manifest from the fact that suspension as applied by Dr. Sayre does not sufficiently correct the twist of the spine seen in lateral curvature.

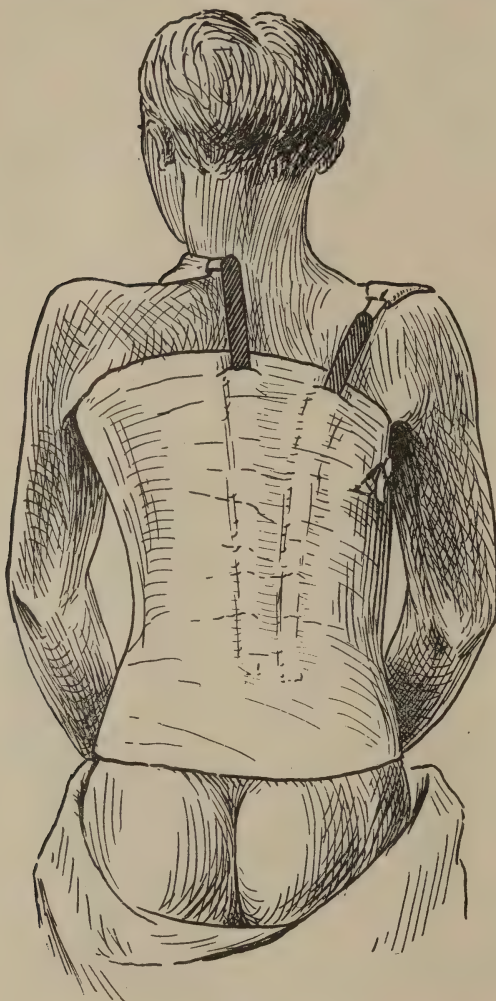


FIG. III. Jacket applied.

It may be frankly admitted that the difficulties presented by extreme curves may be insurmountable or may be only partially overcome. If more pressure is required and for a longer time than can be borne by the patient for the correction of the curves of the bone, or for adaptive changes in the muscles and ligaments, manifestly no correction can be made.

Conversely, however, experience has taught that if sufficient pressure is applied properly, faulty shapes of bone in growing children can be corrected in various portions of the skeleton, jaw and long bones, nor need this pressure be so severe as to be unendurable, provided it be constantly or continuously applied. Bone may be expected to grow straight, if it is prevented from growing crookedly. The softer the bone and the younger the child the more easily is the change produced.

Removable appliances are necessarily less efficient than fixed ones, owing to the difficulty of thorough adjustment after removal; and of fixed appliances, plaster-of-Paris corsets are more easily worn, and more readily adjusted than anything yet devised. It is, however, necessary that they should be applied in such a way as to exert and maintain the desired pressure, as long as it is considered necessary to maintain corrective pressure.

A plaster jacket as ordinarily applied in lateral curvature often slips on wearing and presses upon the concavity, injuring as much as it corrects, even if it corrects at all. It is manifest that the jacket should be applied with the patient corrected as far as possible, and with the patient kept in the corrected position, until the plaster-of-Paris is sufficiently hard to maintain the correcting pressure, and that this correcting pressure should be as great as can be borne without distress and applied in the best possible directions.

It is not the purpose of this paper to relate the details of the experience gained upon the subject. It will be sufficient to mention that the most feasible way of straightening the spine has been found to be by the removal of the superimposed weight by the recumbent position, rather than by vertical suspension, as the latter is less easily borne by the patient. It is also true that the use of an anesthetic in the correction for lateral curves has manifest disadvantages, and cannot be as frequently applied as is usually necessary for increasing correction in lateral curves.

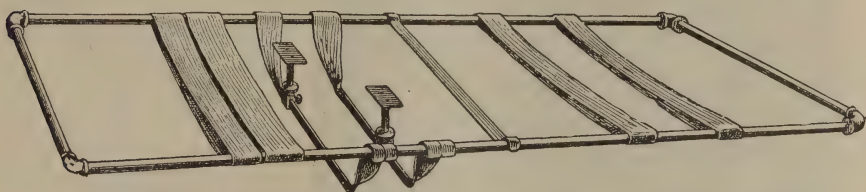


FIG. IV. Frame for the application of plaster jackets for correction of lateral curvature.

In cases such as are suited to correction by this method, if the patient is placed upon the back, with or without head and foot traction, the middle line of the trunk can be made straight. Furthermore, if the patient lies with the weight of the trunk supported only upon certain points, where upward pressure is applied, the sag of the unsupported portions of the trunk will serve to aid in the correction of the twist of the trunk. This correction of the twist may be aided by pressing upon the prominent portion of the distorted chest and thorax, using for this purpose hand pressure downward, during the application of the plaster, upon the front of the patient, while the supporting points on which the patient lies exert an upward pressure.

In the ordinary curves of lateral curvature the portions requiring correcting pressure in the back are, (1) on the projection of the shoulder, or adjacent part of the thorax, below the scapula on one side, and (2) on the opposite side above the scapula or at the back of the neck, and (3) in the lower portion of the trunk in the lumbar region on the side opposite to the prominent shoulder.

In front, correcting pressure is to be exerted (1) on the thorax at its prominent part on one side; (2), on the head of the humerus or acromial end of the clavicle, and (3) projecting pelvic anterior-superior spine on the other. (Fig. I.)

Pressure in this way can be applied without discomfort to the patient, if supporting rods bearing small, removable plates of aluminum (over which felt is laid) are placed under the recumbent patient's back at the required points, the head, pelvis and thighs being supported by cushions on a table, or by straps stretched across a gas-pipe frame. The plaster bandages are

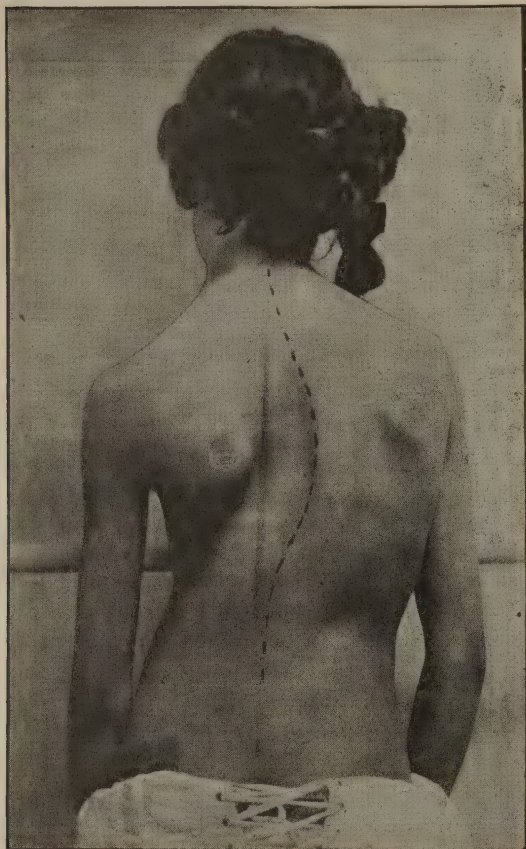


FIG. V. Case III. before treatment.

applied as usual. Downward pressure can be made upon the thorax and shoulder while the plaster is hardening, and when the corset is firm the patient sits up, leaving the adequately padded aluminum plates incorporated in the plaster bandage, and exerting constant pressure. It is desirable that the plaster pass over the shoulder, close to the neck on the side of the projecting neck (that is, on the side opposite to the projecting shoulder), or that a strap attached to a steel be adjusted exerting pressure at this point. If this is not done, the corset will tip when the patient is erect, and the points of correcting pressure will be lost, the upper edge of the back of the corset pressing into the concavity of the curvature

in the back, and the full benefit of the correcting lost. The acromial end of the projecting shoulder is to be kept back by a padded strap. (Figs. II and III.)

A correcting force should manifestly be applied not beyond the point of easy endurance and the jackets should be frequently changed. The treatment should be continued as long as it is possible to obtain correction, after which a removable corset and gymnastic treatment is to be employed. (Fig. IV.)

A few cases will serve as an illustration of this method.

CASE I. Girl, sixteen years of age, with low curve, rotation, spine moderately flexible, has been weak since a period of rapid growth, and unable to carry out systematically any definite exercise. The attempt was made to wear a removable corset, but, owing to the child's condition, this was not successful, and the curve of the back had begun to increase. In view of this the plaster jacket was applied as a matter of trial, although it was felt at the time that possibly it could not be worn, but after two days it was found to be entirely comfortable and the patient much preferred it to any other form of treatment.

CASE II. Boy, thirteen years of age, has worn removable jacket and attempted gymnastic exercises for over a year, but attention to this has not been satisfactory, owing to the difficulty in making the boy carry out systematic treatment. There is a decided curve to the left in the lumbar region, with rotation, and slight curve to the right of dorsal region above. Suspension or recumbency does not obliterate the deformity.

The jacket was applied and worn with perfect comfort, the boy meanwhile taking part in the sports of children of his age. The first jacket was worn for a period of nine or ten weeks. The condition of the back shows complete obliteration of lumbar curve, the upper curve unchanged. In this first jacket no attempt was made toward exerting pressure in the dorsal region of the upper curve.

CASE III. Girl, thirteen years of age, with a resistant curve, which has

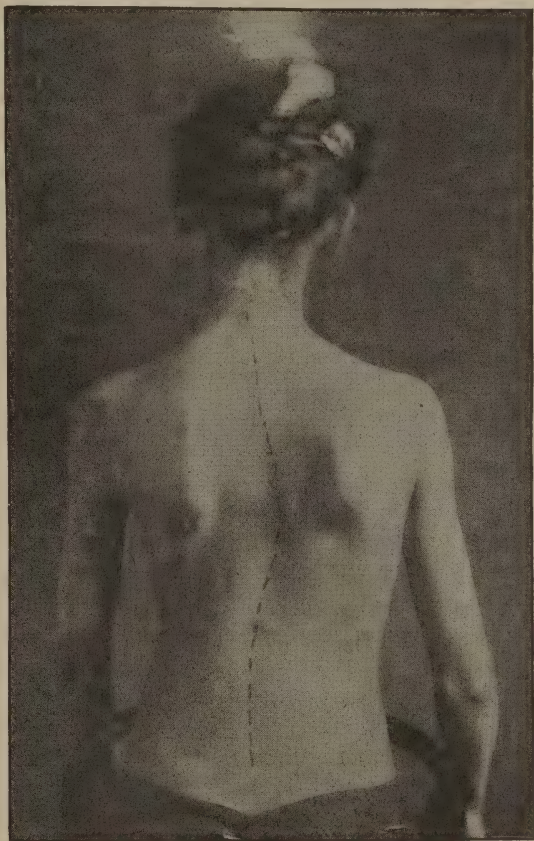


FIG. VI. Case III. after two months' treatment.

been noticed for about a year, usual type, to the right dorsal convex with a small left lumbar convex curve. The curve did not disappear on suspension or recumbency, and there was a permanent rotation of ten degrees. This case presented an unusual degree of inflexibility in a patient of her age. Even by employment of considerable manual force in the recumbent position the curve could not be corrected.

The accompanying photograph shows the result in this case after the removal of the second jacket applied by the method described in this paper. In addition to the change in the condition to be seen in the illustration, an improvement in flexibility was noticed, so much so that with the child recumbent not only did the lateral deviation disappear, but there was improvement in the rotation, which by means of slight manual pressure was much more diminished.—*Boston Med. and Surg. Jour.*

Therapeutic Value of Section of the Sympathetic. At the last meeting of the Académie de Médecine, M. Franck (*Paris Corres. Med. Press*) spoke on his experiments on the section of the sympathetic nerve in the treatment of Basedow's disease, and the effect produced on the circulation of the thyroid body, on that of the brain, the ocular apparatus, and upon the head. The cervical cord of the sympathetic acts as the nerve of propulsion of the globe of the eye, thanks to its action on Müller's muscle; its section suppresses or attenuates exophthalmia. On the other hand, this nerve acted simultaneously as constrictor and dilator of the vessels; its section diminishes the tension intra-oculaire and can consequently have a beneficial influence on glaucoma. As to the supposed vaso-dilating action of the cervical sympathetic on the thyroid gland, it did not exist. Irritation of this nerve determines, on the contrary, contraction of the thyroid vessels, and its section consequently cannot do otherwise than add a paralytic vaso-dilatation to the active congestion of exophthalmic goiter. The vaso-constrictive cerebral action of the sympathetic is none the less apparent; it is thus that section of the cervical cord increases the cerebral blood current. The profit that could be derived from its section for Basedow's malady and for epilepsy was problematic, the theory of cerebral anemia in these two affections being very questionable. The cardiac nerves derived from the sympathetic are only furnished in a small proportion by the cervical cord, they derive for the most part from the superior thoracic region. Their suppression is consequently only complete in the case of total resection. Irritation of the aortic and cardiac branches, like that of the sympathetic, is capable of provoking a series of troubles in the circulation similar to the accidents of Basedow's malady.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Arterio-mesenterial Obstruction of Bowel at the Duodeno-Jejunal Junction, and its Causal Relation to Dilatation of the Stomach. Albrecht (*Virchow's Archiv.*, Band CLVI., S. 285) reports two very interesting cases of obstruction of the bowel which was brought about by traction upon the superior mesenteric artery. This vessel crosses over the duodeno-jejunal region of the bowel and between the latter and the pancreas, in its course from the aorta to supply the greater part of the small and large bowel. Now if the small bowel sinks into the pelvis through stretching of its mesenterial attachment from any cause, the position of the vessel in question is favorable to closure of the small bowel. The obstruction is only permanent, however, in those cases in which attachments have formed in the pelvis. Both conditions existed in the author's cases, *i.e.*, enteroptosis and pelvic fixation, the fixation in these cases being due to a high-grade dilatation of the stomach.

Nature of Acute Leukemia. Ramond (*Le Progrès Méd.*, Aug. 19, 1899), after commenting on the amount of interest which has latterly been focussed upon this subject, calls attention to the fact, that in spite of much work and numerous contributions to literature, its etiology is still a sealed book, though it is well defined, both as to its symptomatology and its lesions. As to whether it is infectious or toxi-infectious, or some neoplastic process confined to the lymphatic system? At present no answer to this can be given. The author is inclined to regard it as a disease peculiarly common to the Germans, since Ebstein and, later, Frankel have been able to collect 56 observations in a comparatively short time. I take it, however, that this is but another tribute to their scientific acumen. Indeed, the author himself goes on to say, though the affection is rare in France, it is not at all exceptional, and since it has become better known, contributions dealing with this disease have been multiplied. Nevertheless, it does seem that the

Anglo-Saxon race is more susceptible than any other. Etiologically, then, we know nothing; its symptomatology is more precise. Its course is that of an infectious malady, beginning often with fever, sore throat, muscular soreness, prostration, chills, anorexia, and soon after the cervical glands enlarge and increase rapidly, the glands of the mediastinum are quickly involved and, in rapid succession, all other lymphatic elements in the body. The liver and the spleen do not escape, but undergo considerable enlargement, diarrhea with very frequent passages and meteorism supervene, fever, active and continuous, hemorrhages from the gums and epistaxis. The urine contains considerable urea, uric acid and urates, and sometimes albumin and blood. In spite of treatment, its march is progressive and almost always fatal, the course extending over 3 to 6 weeks, rarely longer. It is scarcely necessary to point out the striking resemblance to an undeniably infective process, the blood examination alone failing to confirm that view. In this condition the erythrocytes are diminished in number and in hemoglobin richness, their form variable and some are nucleated. The leucocytes, on the other hand, are very numerous, perhaps as many as 500,000 per c.m.m., the striking feature being that this increase is largely made up by the large mononuclear leucocytes, and according as their protoplasm contains, or not, neutrophile granulations, the disease is designed myelogenous or lymphatic leukemia. This terminology was proposed by Ehrlich and Lazarus, who believe that the mononuclear neutrophiles have their origin in the bone marrow, the others in the lymphatic system. Be this as it may, however, the leucocytes are hypertrophied, their nuclei stain poorly and the protoplasm is small in amount and quite indistinct. They are devoid of movement. The other white-cell elements also suffer some changes, chiefly quantitative, however. The polynuclear leucocytes, which normally number 60 to 70 % of the total number in the blood, do not exceed 25 %. The lymphocytes and small mononuclear leucocytes are rather less than normal. Nothing in the above description of the blood changes suggests an infection. The presence of microorganisms or their products in the system, when producing any blood change, bring about an increase in the polynuclear leucocytes; and further, in all inflammations, the leucocytes maintain their proper dimensions. Here this is not the case, but the large mononuclear leucocytes are increased, their protoplasm and nuclei profoundly modified, and there is no resemblance to the nuclear and protoplasmic degenerations occurring in the course of certain infections. Further, the histological lesions are unlike those of an acute infection. In acute leukemia the enlarged glands present a hyperplastic condition of the normal reticulum, in the meshes of which are found numerous small mononuclear cells and a greater or lesser number of the large mononuclear variety, with or without granules, depending on the special form of the disease. The liver and kidneys do not present the round-cell infiltration so frequent in infections, but are more complex, being made up of areas resembling the lymphoid tissue of His. These areas—nodules—consist of fine reticula, holding numerous small cells in their meshes, and are to be met in most of the viscera, bone marrow, subcutaneous tissue and

intestinal walls. Anatomically, then, the disease is not an infection, and this is the most formidable argument advanced by the adherents of the neoplastic theory. Still it is possible that a hitherto undescribed micro-organism is the cause, or it may be a sporozoa. Hintze has described a coccus obtained from the blood, Powysotsky and Osterwald one in the enlarged glands; Frankel found in several cases staphylococci, streptococci, and a bacillus similar to that of Escherich. The dissimilarity of the findings in the presence of such a constant picture clinically, negative their specificity. It is quite likely that the organisms recovered were the cause of a secondary infection, having gained entrance to the circulation through the mouth, tonsils, or intestine. Numerous investigators have failed entirely to find any organism present, as the author, who tried to grow them both with and without oxygen, and in collodion sacs as suggested by Witschnikoff. Further inoculations were made into all the laboratory animals, including dogs, without result. All that can be said, as is the case with carcinomata, is, that clinically the disease resembles an infectious process, but no anatomical or experimental evidence has so far proved confirmatory.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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The Relation between the Healthy and Diseased Portions of the Stomach. Soborow (*Bolnitsk. Gaz. Bot.*, Vol. X., No. 23) has conducted a series of elaborate experiments with a view of determining the vicarious activity of the healthy portion of the stomach under pathologic conditions, as well as the action of cold and heat on the gastric m.m. A dog in whom a portion of the stomach had been isolated, received 600 c.c. of ice-cream, and 52 c.c. of gastric juice was obtained from the isolated portion, whereas with ordinary milk the amount obtained was 46 c.c. On the same day the dog received a mixed diet consisting of 200 gms. each of bread, meat and water. The amount of gastric juice obtained was 114 c.c., this being $1\frac{1}{2}$ times the normal. On the following days the same diet gave 88 c.c., then 82, then 75 c.c., 76 c.c., 70, 65, 58, and finally back to normal (76 c.c.). This experiment shows that cold introduced into the large stomach produces in the isolated stomach, first, a hyper- and then hyposecre-

tion. When ice has been used the hypersecretion was preceded by a marked hyposecretion for several hours. This variation from the normal was at times accompanied by general disturbances, such as nausea and vomiting, but again, at others, no disturbance whatever has been observed, showing that in many instances marked disturbances of the gastric secretion may be unaccompanied by any external manifestations. Having established the normal proportions of the secretion of gastric juice in the isolated part and the rest of the stomach, the author proceeded to determine the variations of these proportions under pathologic conditions. He found that when the large stomach is in a state of hyposecretion the functional activity of the isolated portion is markedly increased, in other words, there occurs vicarious hypersecretion and *vice-versa*. The effect of very hot water has also been established. When the dog received 600 c.c. of water at 60°R. (75°C.) the secretion of the large stomach stopped completely for 13 days; the isolated stomach, on the other hand, showed a very marked hypersecretion. The reflex effect on the isolated stomach has been noticed. Thus ice, hot water and 10% sol. of nitrate of silver produced achylia in the large stomach and also a hyposecretion in the isolated stomach for several hours, the latter effect being due entirely to reflex action.

The Spleen and the Ferments of the Pancreas. Popelski (*Vratch.*, Vol. XX., No. 25) endeavored to settle the disputed question as to the role the spleen plays in the production of the pancreatic ferments. For this purpose he performed elaborate experiments on dogs and cats, which experiments led him to the conclusion that the spleen does not participate in the formation of the ferments of the pancreatic juice. The latter was not changed in its digestive properties after the removal of the spleen. The function of the pancreas, although depending upon the circulation, may nevertheless continue for a considerable period even after all its blood vessels have been tied. The work of the pancreas depends on the ingestion of food which, by means of the nervous mechanism, stimulates the former to activity. The theory of Schiff, who supposed that an intimate relation exists between the spleen and the production of pancreatic juice, is therefore proved to be incorrect.

Cancer of the Common Bile-Duct. Musser (*Univ. Med. Mag.*, Sept., 1899) reports an interesting case of the above affection, the prominent features of which were a moderate jaundice, not associated with pain in the region of the liver or gall bladder, painless and uniform enlargement of the liver and a freely movable mass, which was the distended gall-bladder. Emaciation was slight. Digestive disturbances were not very marked. Anorexia, nausea and fullness after eating, accompanied by flatulence, mostly intestinal, were present. Bowels were constipated, stools clay-colored, urine contained a trace of albumin. The duration of the disease was only seven weeks. The fatal issue resulted from an uncontrollable intestinal hemorrhage. Age of the patient was 54 years. The family history was generally good, except death of sister and aunt from cancer. Personal

history prior to last illness was excellent. The diagnosis during life was established by the gradual increase of the jaundice, complete occlusion of the duct, not due to gall-stones or any other mechanical obstruction, and exclusion of any other disease which might be responsible for symptoms. Autopsy confirmed the diagnosis.

On Some Diseases of the Stomach and their Diagnosis by Chemical Methods. Harley (*The Pract.*, Oct., 1899) describes in one of his clinical lectures the usual methods employed in gastric analysis, giving illustrative cases. In many instances a correct diagnosis could only be arrived at through a chemical analysis. The author also states that the majority of cases of so-called dyspepsia are undoubtedly of a neurotic origin. Cases of true catarrh are of comparatively rare occurrence and as a rule caused by some irritant, such as alcohol, excessive smoking, or highly seasoned food. Mucus and fatty acids in such cases are always present, usually in excess. Speaking of the treatment of hypoacidity, the author recommends the use of intragastric electricity, but the latter is successful only in the hands of skilled people. [High tension faradic currents applied with the intragastric electrode lessen excessive secretion and are very useful for hyperchlorhydria. In mentioning the methods employed in the physical examination of the stomach, the author fails to give the percussion method, which is very useful not only in outlining the boundaries of the stomach but also in determining the motor power.—Ed.]

NEUROLOGY.

UNDER THE CHARGE OF

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An Investigation upon the Plantar Reflex, with Reference to the Significance of the Variations under Pathologic Conditions; Including an Enquiry into the Etiology of Acquired Pes Cavus. James Collier (*Brain*, Vol. XXII., No. 85, p. 71) publishes an interesting paper on the plantar reflex. Babinski has found that in some cases the flexion of the toes upon the metatarsus, occurring in the normal plantar reflex, is replaced by extension of the toes. This phenomenon was found by him only in those cases—excepting new-born infants—in which lesions existed in the central motor tract. The extension of the toes, according to Babinski, never occurs in normal adults, or in functional disease, and is the earliest sign, and may be the only sign, of lesion of the pyramidal tract. Collier confirms the statements of Babinski, Van Gehuchten and Brissaud in all essential points. He believes that the “extensor response,” as he calls

it, is found only when a lesion of the pyramidal system exists, and consequently is a sign of great clinical value. In cases of total transverse lesion of the spinal cord, the extensor response is the only reflex phenomenon present in the lower limbs. The flexor response is obtained in functional cases, when any plantar reflex is elicited. Collier finds also that the pes cavus, frequently found in lesions of the pyramidal system, is intimately associated with the "extensor response" in the plantar reflex, and is produced by a state of reflex hypertonicity preponderating in those muscles which respond most vigorously in the plantar reflex. In all such cases of pes cavus, evidence of increased tone in certain muscles can be demonstrated. The theory that the pes cavus of spastic conditions is due to weakness of the interossei is not justified. [It may be added that the "extensor response" is not held by all investigators of the plantar reflex to be absolutely pathognomonic of lesion of the central motor tract.]

MEDICAL DISEASES OF THE KIDNEYS.

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Notes on a Case of Hematuria from Healthy Kidney. Myles (*Med. Press and Circ.*, Aug. 23, 1899) reports the case of a woman 26 years old. Operated on for hemorrhoids in 1898 she shortly after began to suffer from recurrent attacks of pain in the middle line and on the left side of the abdomen, travelling down to the thigh, the attack simulating renal colic, and thought it was due to indigestion. At the later stage of the disease the pain was practically constant, though never agonizing. Accompanying this were hematuria, progressive emaciation and anemia, the loss of weight amounting to 28 pounds in 2 months. On palpating the abdomen, both kidneys could easily be felt and moved, particularly the left. The right kidney gave no pain on palpation; over the left great suffering was complained of on pressure downward and forward. The urine contained almost pure blood. No tubercle bacilli were found, and the urine, when free from blood, was practically normal. On examination of the bladder by the cystoscope it was seen that there was bleeding from the left ureter. It was decided that if medical treatment did not relieve the condition an operation should be done. Two months after her first visit she was operated on and

the kidney was fixed. This did not relieve the hematuria, and the kidney was removed. On examination of the kidney by the naked eye abnormalities of most importance were in the pelvis, where the mucous membrane was red, thickened and pulpy, covered with minute papillaeform elevations and rugae, which gave its interior a curiously rough appearance. Microscopic examination revealed myxangiomatous changes in the submucous tissue of the pelvis of the kidney and this was thought to be responsible for the hematuria.

A Case of Primary Renal Tuberculosis of Twenty Years' Standing. Frank (*Med. Rec.*, Sept. 9, 1899) cites a case of a woman who was treated for cystitis for the last 20 years. She had, off and on, frequent urination, pyuria, polyuria, burning and hot feeling in the back. Had two or three attacks of colicky pain, followed by inflammation of the urethra and a rise of temperature. Diagnosis of inflammation of the kidney was made. No history of calculi. On catheterizing the ureters a small amount of normal urine was collected from the left kidney. From the right kidney no urine could be drawn. On microscopic examination of the urine there was found an abundance of pus and epithelial cells. A part of the sediment was stained and tubercle bacilli were found. The diagnosis of tuberculosis of right kidney was made upon these facts and the absence of signs of tuberculosis elsewhere. On operation the right kidney was removed, together with a greater portion of the ureter, and found to be diseased. The woman has not been seen for a year, and at last account was in good health.

The Urino-Glucosometer. Stern (*St. Louis Clin.*, May, 1899) advocates the use of the urino-glucosometer instead of the copper tests in the examination for sugar in the urine because of the following substances which are known to reduce the copper: (a) Uric acid, the urates, creatine, hypoxanthin, hippuric acid, indican, alkapton, alkaloids, tannin, gallic acid, pyrogallol, camphor, copaiba, cubebs, some other carbohydrates, etc. (b) Albumin, parapeptone, peptone, creatin, salts of ammonium, etc. He thinks that the Robert's fermentation method is the best, and has devised a little apparatus for the more practical and convenient application of this quantitative test.

DERMATOLOGY.

UNDER THE CHARGE OF

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An Endemic of Pemphigus. Marx (*Med. Rev.*, St. Louis, Sept. 30, 1899) reports a series of cases of contagious pemphigus starting in a 3-days-old infant, and spreading to other members of the family. The infant was well until the third day, when it developed a vesicle upon the scalp and

another upon the abdomen, the latter enlarging in the course of 24 hours to the size of a dollar. At this time the child nursed poorly and had green stools; temperature, 99.4°. Five days later the lesion, which had been slowly spreading, extended with tremendous rapidity, the erythema spreading from the edges of the old bullae and a continuous lifting off of the epidermis occurring. The back, face and chest were extensively involved, the back being entirely denuded; the epidermis hung in ribbons from the hands. Temperature, 103°. Death occurred upon the ninth day of the disease. On the sixth day of the child's illness the mother developed bullae from the size of a pea to a dollar, first upon the mammae, then in the groin and later scattered over the body. On the day of the baby's death, it was found that the nurse had some vesicles on the side of her neck, against which she had been in the habit of holding the child. The father contracted a large vesicle upon the forehead, and his three boys all developed mild forms of the disease. The physician herself had a vesicle appear upon the left forearm, which lasted a week. [This disease is designated by some pemphigus contagiosa, but more properly belongs to the impetigo group. True pemphigus is a far more serious disease, and is not transmissible from one individual to another.—J. F. S.]

Finsen's Phototherapy (In the Treatment of Lupus). Bie (*Phila. Med. Jour.*, Oct. 7, 1899) describes the treatment of lupus and certain other bacterial skin diseases by concentrated rays of light, as employed by Dr. Finsen in his "Medicinische Lysinstitut," in Copenhagen. The experimentally proven data upon which the method is founded are: (1) The bactericidal property of the chemical rays of light; (2) the power of the chemical rays to produce an inflammation of the skin; (3) the power of the chemical rays of light to penetrate the skin. Finsen found that on days of bright sunshine in July and August in Copenhagen, the sunlight killed the bacillus prodigiosus in plate cultures within 1½ hours. In order to obtain more rapid action, the light must be concentrated. Concentrated electric light from an arc lamp of 25 amperes was found to kill bacteria, when spread in a stratum of agar about $\frac{1}{2}$ m.m. thick, in a few seconds. About 350 cases of lupus were treated. The earlier patients were treated by the light alone; the same was done with all mild cases. The more serious cases were treated with a pyrogallie acid ointment, in order to make the skin smooth and as easily penetrable as possible. In none of the cases was the treatment quite without effect, but in about 5 cases the improvement was very slow. In all the 350 other cases the result of the treatment was satisfactory. From the moment improvement begins it is without interruption until the last nodule of the lupus patch has disappeared. "In all of the 350 cases this result has been so certain and so constant that there is every reason to doubt the accuracy of the diagnosis of lupus vulgaris when this mode of treatment appears to be ineffective." Finsen makes use of sunlight in the summer months, and a 50 to 80 ampere arc lamp during the rest of the year. The light is concentrated (in the case of sunlight) by passage through a lens of about 20-40 c.m. diameter. In order to avoid burning the skin, there is

placed between the two glasses of the lens a weak ammoniacal solution of sulphate of copper, which filters out the heat rays. The electric light is made to pass through a series of lenses in a telescopic tube, distilled water being here interposed to absorb the heat. The lenses are made of quartz, because this material in a far higher degree than glass allows the ultra violet or chemical rays of shortest wave length to pass through. The skin must be still further cooled to avoid burning. This is effected by a little apparatus consisting of a plate of quartz and a lens of the same material, through which cold water is allowed to flow. This is pressed down upon the skin by a rubber band attachment, thus making the skin anemic and favoring the penetration of the light. In this manner an area of skin $1\frac{1}{2}$ c.m. in diameter is treated each day for one hour. The area treated becomes red and swells, a bulla may appear, but necrosis has never been observed.

Troublesome Vesicular Eruption Cured by Circumcision.

Bulkley (*Jour. Cut. and Gen.-Urin. Dis.*, Oct., 1899) reported the following case to the New York Dermatological Society. Ten years ago he had had under his care a physician with a chancre on his finger. His wife had also been infected. Subsequently they had had a healthy child. About 3 months ago, the child, aged 4 months, had come to him with an itching vesicular eruption upon the legs and abdomen. Syphilis was excluded at once and the affection regarded as a reflex herpes. No other cause but a long and adherent prepuce could be found. Circumcision was therefore advised. Within three weeks after the operation all trace of the eruption had disappeared. The eruption had previously lasted 4 months, and had resisted all local treatment. There was no recurrence. Bulkley stated that it was one of the most striking instances of reflex eruption that he had ever encountered.

THERAPEUTICS.

UNDER THE CHARGE OF

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Sulphonah Poisoning. Gulland (*Scot. Med. and Surg. Jour.*, April, 1899), in an exhaustive paper, calls attention to the fact that the majority of people believe this drug a perfectly safe one. He mentions an acute fatal case of a woman, where 30 grs. were taken and death resulted in 40

hours. The chronic forms he considers more dangerous, as in acute forms active treatment usually saves the case; chronic cases, with the symptoms pronounced, rarely recover. Constipation favors poisoning, as the drug is rather insoluble and remains in the intestinal tract for some time, thus being slowly absorbed. It should not be given in cases where there is great prostration, weak heart or kidney lesion. The maximum dose for a man is 30 grs., for a woman 20. It should never be given continuously; at least 3 or 4 days should intervene. Trianol, he believes, is safer, and not so liable to produce the chronic forms of poisoning as sulphonal, for it requires less and is more soluble. Chemically, trianol is a modification of sulphonal (diethyl-dimethyl sulphone-methane) where one of the methyl radicals has been displaced by an ethyl. The deep red urine is due to the elimination of hematoporphyrin and generally contains unchanged sulphonal.

Notes on the Treatment of Severe Chorea by Sulphocarbolate of Sodium. Wilson (*Birmingham Med. Rev.*, July, 1899) found that this drug produced such a marked change in a case which he thought could only terminate fatally, and, it being rather rare to see severe cases, he did not deem it wise to wait until he could collect a series of these before reporting it. He administered 20 grs. every 2 hours in conjunction with 1 or 2 grs. of quinin in alternating doses. Cardiac depression was expected, but not noted. The author was induced to use the drug for its antiseptic properties. Chloral and hot packs were also used. Nourishment was pushed, such as pancreatized raw meat juice, milk, etc.

Treatment of Erysipelas by Carbolic and Camphor. Schweler recommends (*Medicineskoie Oboerenié*, 1899, No. 4) for the treatment of erysipelas a mixture of chloral, 1 part, and camphor, 3 parts; this forms a transparent, rose-colored liquid, with the specific gravity of 0.999. It is applied to the surface every 3 hours, depending upon the part affected. The author treated 33 cases—26 being of the face. No gangrene, abscess, cellular degeneration or renal complications were noted in any of the cases. High temperatures rapidly fell, and in some the course of the disease was rapidly terminated.—[*Rev. de Ther. Med. Cher.*; *Gaz. des Hop.*, Vol. LXXII., No. 75.]

Carbolic-acid Gangrene. Brougham (*Med. Rev.*, Jan. 21, 1899) reports 2 cases which came under his own observation; the first, a woman, 17 years of age, who applied a 3% carbolated salve to a trifling wound of the finger; it caused burning that kept her awake, and the following morning the finger was gangrenous. Second, a man, 56 years, applied a solution and compress of unknown strength over night; next morning the skin over the part was gangrenous. He has gathered about 45 other cases in literature and gives several others in detail.

CLIMATOLOGY AND HYGIENE.

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“Climate-cure” in the Treatment of Incipient Phthisis.
Taylor (*Med. Times*, Aug., 1899) justly reprimands the custom of physicians to send away their tuberculous patients to some “climate” without due consideration of the patient’s habits, financial circumstances, etc. A climate without proper hygiene or diet will accomplish nothing. A bad boarding house will nullify the effects of the finest climate. Change of climate is very often of the greatest benefit to phthisical patients, and this seems to be intimately associated with elevation above tide water, though there are many localities with no considerable altitude where a good effect is often exerted upon the disease. The matter of choice of climate is exceedingly difficult. It is impossible entirely to determine the nature of what might be called “climatic idiosyncrasies” in patients. We are therefore obliged in the choice of a climate for a patient to follow certain rules. First is to be investigated the individual susceptibility to cold and heat, respectively. We must carefully inquire whether the patient is always chilly in winter or whether he is exhausted and depressed in summer. It seems to be folly as well as cruelty to compel an anemic, emaciated individual, who is always chilly and whose circulation is feeble at the best of times, to spend a winter in a cold, bleak, windy, northern climate. While the Adirondacks in winter are certainly of benefit to many, it would seem almost proven that they cannot but disagree with others; in fact, experience proves that they do. On the other hand, there are many patients to whom even the early spring warmth of Florida is invariably depressing, and who reap no benefit from sojourning there. It is, after all, hygiene throughout, which we must keep in mind, and not merely the effect of a certain climate upon the lung alone, as though it did not belong to the body. Another factor of some importance in selecting a locality is a knowledge of the diurnal range of temperature.

The annual average temperature and the average for each month can usually be ascertained without difficulty for the more frequented health resorts, but the daily variation is not so easily to be learned, and yet it is on just this factor that the comfort of the patient may depend. A perfectly equable temperature is certainly of great advantage. Unfortunately, it is not so apt to be found in dry air and elevation above the sea as it is at lower regions. Still another matter is the nature of hotel accommodations and other comforts; and this has to be considered most carefully in reference to the individual. Though a strong man with beginning phthisis, which has had but little effect upon his general health, may do well if sent to a region where he will spend his days in the saddle and his nights in the open air, it is clear that for women and many male patients no such regime can be prescribed.

Enteric Fever in India. Claxton (*Ind. Med. Rec.*, Vol. XVI., No. 18) points out the frequency of typhoid among the newly arrived British troops, and the comparative immunity to this disease enjoyed by the natives. This marked difference in susceptibility he ascribes to the following conditions: (1) The soldier comes out to India at the period of his greatest susceptibility. (2) The liver, partly from the effects of a hot climate, and partly from the too free indulgence in highly seasoned animal food and alcoholic beverages, becomes over congested, diminishing the resisting power of the organism. (3) The eliminative functions of the skin are largely hampered by unsuitable and over-abundant clothing. The Hindu, on the other hand, is practically a vegetarian, and his drink is pure water. The liver and all other emunctories are not overburdened, and perform their functions properly. The light clothing worn by the natives, and in many instances the adoption of nature's garb, permits free action of the sweat glands. As to the origin and mode of spread of the disease the author adheres to the theory that Eberth's bacillus, as a distinct species, is the specific cause. The infection is usually carried by water, and may be traced to any or all the following sources: (1) To fissures caused by excessive drought. (2) To the subsidence of the soil and its porosity. (3) To the natives engaged in water-works not being particular where they attended the calls of nature. (4) To the agency of frost; the typhoid germ being ejected, after a lengthened period of confinement, by heavy rains and the accompanying thaw. (5) To lowness of wells, combined with great heat. (6) To the water derived from the surface drainage of cultivated manured lands. (7) To the sand and gravel used for filters being obtained from infected sources. Outbreaks might also be traceable to contaminated food supplies—thus cattle, which have drunk sewage-infected water, have been known to affect their milk. Prof. Hankin traced an outbreak in the East Surrey regiment to infected "*dahi*," and in 1894 an outbreak, which occurred at Meerut amongst the members of the Army Temperance Association, was traced to the half-baked bazaar cakes, the bacilli which occupied the centre of these cakes being shielded from injury by the low heat. Animals and insects have been known to spread this disease; prairie dogs do it through their dejecta, and flies by moving indiscriminately from one kind of food or filth to another.

SURGERY.

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Antistreptococcic Serum in Erysipelas. Bond (*Med. Press*, Sept. 27, 1899) reports four cases of facial erysipelas, the recovery from which seemed to be materially aided by the use of the antistreptococcic serum. The serum was given daily in doses of 10 c.c., and injected into the anterior abdominal wall. In these 4 cases the success of treatment is believed to have been marked.

The Reflux of Air into the Ureters. Kelly (*Amer. Jour. Obstet.*, Oct., 1899) has witnessed air bubbles escaping from the ureteral orifice not less than 12 times in examining the air-distended bladder with the patient in the knee-chest posture. This was usually due to the entrance of air into the ureter from the bladder, although in one instance it resulted from the presence of a gas-forming bacillus in the kidney. While this observation indicates that the ureteral orifices are not air-tight under all conditions, it does not prove that they are not water-tight under physiologic conditions. The escaping bubble of air is of value in locating the ureteral orifice during cystoscopy. No ill effects from this entrance of air have been observed.

A New Operation for Inguinal Hernia. Beck (*Med. News*, Sept. 16, 1899) describes a new method of fortifying the abdominal wall in inguinal herniotomy that he has employed in 3 cases. An incision is made along the outer margin of the rectus muscle, exposing its lower third. The hernial sac is isolated, ligated and cut off within the internal ring. A muscular flap, consisting of the outer third of the rectus muscle, is now turned down. This flap has its apex near the junction of the inferior and middle third of the rectus, and its base below, and is fastened (by cat-gut) to Poupart's ligament upon one side and the conjoined tendon upon the other. The cord is placed upon this muscular flap and is in turn covered by uniting the cut aponeurosis by a continuous suture. The muscular gap above is obliterated by uniting the cut edge of the rectus to the local abdominal muscles.

Localized Tuberculosis of the Intestine. Mayo (*New York Med. Jour.*, Aug. 19, 1899) gives the history of 7 cases of localized tuberculosis of the intestine. Despite the serious nature of the operation and the fact that

some of the patients were operated upon a second time, but one of the patients died. The first operation consisted of the separation of adhesions and drainage for a localized tuberculosis of the ileum. A fecal fistula followed, which was relieved by Dupuytren's operation, with the complete recovery of the patient. The second patient had intestinal obstruction from tuberculous ulceration of the ileum. Four inches of ileum were excised, an end-to-end anastomosis made and fistulous openings of adherent intestinal coils were repaired. Despite a transient fecal fistula, perfect health resulted. The third patient had tuberculosis of the sigmoid and uterine appendages. During the separation of adhesions both bladder and ileum were opened. These tears were immediately repaired and the uterine appendages removed. Death from septic peritonitis resulted. In the fourth patient the process involved the caecum, the appendix and the right ovary and tube. The appendix, right uterine adnexa and a portion of the caecum were excised and a retrocaecal tuberculous pocket curetted and drained. The patient improved, but 6 months later an ileocolostomy was necessary for intestinal obstruction. The patient was afterward discharged in good condition. The fifth patient had tuberculosis of caecum and ascending colon with tuberculous abscess formation. An opening of the bowel was repaired and the abscess cavity drained. Four months after operation there had been a gain of 30 pounds. The sixth case was one of tuberculosis of the sigmoid, causing stricture. The appendix was first removed. Four months later there were grave signs of intestinal obstruction. The sigmoid stricture was dilated and a secondary enterostomy and colostomy performed. The patient is rapidly improving. There was tuberculosis of the caecum and appendix in the seventh patient. The appendix was removed with a portion of the caecum, and improvement has resulted.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Surgery of the Fistulae of Steno's Duct. Critical Study of the Operative Procedures (in the New Method of Professor Prince-teau) (La Chirurgie des Fistules du Canal de Stenon. Etude Critique des Procédés Operatoires) (nouveau Procédé de M. l'Prof. Agrege Princeteau). Baillif (*Thèse de Bordeaux*, 1899) reduces all the different procedures for the cure of fistulae of the parotid canal to five principal methods: (1) Simple occlusion of the fistulous orifice; (2) atrophy of the gland; (3) re-establishing the natural canal; (4) formation

of an artificial canal; (5) transplantation of the canal. The first method consists in closing the orifice of drainage. This can be accomplished by caustics; or by the suture, after freshening the edges of the fistula and cauterizing them; by autoplasty, as it was done by the elder Berard, and last by compression. To obtain atrophy of the parotid glands three different methods may be employed: (1) Ligature of the duct of Steno; (2) its obliteration by a foreign body; and (3) by irritant injections forced in the gland. The method of re-establishing the natural passage may be accomplished either by the seton, which has been the proceeding employed by Louis and Morand, or by the canula, a method favored by Berard. The fourth method is that of formation of an artificial canal, and is the one most often employed. There are two procedures: First, single puncture by the methods of Deroy, Mouro, Desault, Duphoenix, or Richelot, or the double puncture invented by Deguise and modified by Beclard. The fifth method is that of transplantation, invented by Langenbeck, of Berlin, and adopted by Princeteau with some modification. The first step of this operation is a mapping out of the points to be repaired. Incision, followed by a search for and isolation of the posterior border of the duct of Steno. The second step is the toilet of the posterior border of the duct of Steno. The third step comprises puncture of the masseter, transplantation and fixation of the posterior border. Despite the efficiency of this procedure, it does not follow that it should be employed to the exclusion of all others, but the author believes that only those cases in which transplantation would effect a cure should be preferred to it. In all cases two portions of the duct of Steno should be taken into consideration; one intraglandular and the other extraglandular. The latter can be divided into a masseter and buccinator. Princeteau's method is indicated in the cases of fistula in the buccinator region and is also very practicable in fistula in the masseter division.

Treatment of Ozena by Citric Acid (Die Behandlung der Ozaena mit Citronensaure). Hamm (*Munch. Med. Woch.*, No. 15, 1899) treats ozena with citric acid in the following way. The patient uses every morning a nasal douche, and frees as far as possible the nasal fossa from pus and crusts. He then insufflates three times a day into the nostril a powder composed of citric acid and sugar of milk, equal parts. The deodorizing action of the citric acid is so strong that it causes all odor to disappear, even when the powder is insufflated without the previous cleansing from pus and crust. The odor disappears immediately, and does not reappear after the insufflations have been discontinued for some days. Finally, the secretion is even found diminished. The author has observed a case of cure having lasted for some months. The odor gradually reappeared again, to disappear anew under the influence of the citric acid. This treatment exercises a favorable action on the general condition, especially in young women with anemia and failing appetite, symptoms due in most to a psychic depression which this odor produces and thus renders their lives almost intolerable. When the odor is removed, the patients take courage, become more cheerful and eat with a better appetite.

The Choice of Sea Waters and Mineral Waters in Chronic Affections of the Upper Respiratory Tract (*Die Wahl des Badeortes resp. des Mineralwassers bei den Chronischen Erkrankungen der Oberen Luftwege*). Linkenheld (*Deuts. Med. Zeit.*, No. 15, 1899) says that concerning the chemical and thermal properties of mineral waters not only the condition of the pharynx should be taken into consideration, but also the digestive tube. This latter should be always thoroughly examined, and if the catarrh of the pharynx is purely local and the digestive tract is found in the normal condition, warm alkaline waters can be prescribed with success. If, on the contrary, the affection of the pharynx is due to a chronic intestinal condition, such as chronic constipation, cold sulphur water should be prescribed. As regards the temperature of the waters, a very warm water should not be prescribed for fear of increasing the chronic hyperemia which exists as a rule in these affections of the upper respiratory tract. Cold water should be prescribed in dry catarrh, and as dampness plays a greater or less role in cases of this type, the patient should be sent to the seashore. We should not be contented with the internal administration of the waters alone, but they should be given in the form of inhalations and douches, either hot or cold, or alternately hot and cold, according to indications, as in this way the best results are obtained. The chemical constitution of the water seems to have little importance. Ordinary water will render as good service as that containing a large percentage of mineral salts.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Massage and the Relief of Eye-strain in the Treatment of Glaucoma. Gould (*Phila. Med. Monthly*, Oct., 1899) reports several cases of glaucoma in which these measures produced the most satisfactory results. It is not expected that inflammatory and atrophic changes induced by long-continued excess of intraocular tension will be remedied, nor is the beneficent effect of iridectomy denied, but it is claimed that in the early stages of glaucoma, and in advanced cases in which operation is not available, the proper correcting lenses and massage are of the greatest therapeutic value. Gould's technic of massage is simple, but requires delicacy of touch and intelligence on the part of those who carry it out. If the patient has these qualities, she may be instructed in the art. If not, some friend or professional nurse must be taught. The soft parts of the ends of the fingers or thumbs are used and through the closed lids. He begins with alternate palpation by two fingers, exactly as in estimating tension, but much more slowly. All pressures and movements should begin and proceed to the extreme, very slowly and softly; the release or lessening of pressure may be a

little more quick, but never sudden. The depth of the denting or the force exerted will depend on the hardness of the globe. In high tensions greater pressures are safe. When the tension under massage approaches the normal, as it will do, the force exerted will be lessened to that which would produce clear discomfort if one's own or the normal eye were pressed. The patient's judgment of the matter must be consulted, and will not be far wrong—an added reason for making the patient the operator when the intelligence and self-control will warrant. Palpation should be through the upper lid with the eyeball in the positions of extreme adduction, normal forward looking, extreme abduction, and extreme depression. In extreme elevation the lower lid is used. Each position must be ordered systematically while massage is being carried on (the position of the other eye may be observed as a guide); in this way fully three-fourths of the globe is operated upon. The length of the sitting depends upon the time required to bring about normal tension, which is usually from 3 to 5 minutes. Sometimes normal tension will not follow so soon. Gould has yet to see any considerable bad results, such as conjunctival hyperemia, although patients have sometimes alluded to the fact that there was some irritation or discomfort following long-continued or too rough manipulations. He alternates the alternate palpation with two fingers with shorter rolling or rubbing movements (effleurage), carrying the lid so far as easily movable with and beneath the finger around the equatorial regions of the globe. Gould believes that the fundamental cause of glaucoma in a large majority, if not in all, cases is long-continued, pre-existing eye-strain, spurred beyond resistance by presbyopia. Hence the primal prophylactic as well as therapeutic measure is relief of eye-strain, not by antediluvian or optician methods of refraction, but by skill and exactness that approximate that used to calculate eclipses or test a chemic reaction.

Nitric Acid as a Cautery in Corneal Ulcers. J. S. Johnson (*Amer. Jour. of Ophthalmology*, July, 1899) believes that nitric acid meets the requirements of a desirable corneal cautery, viz., it produces the desired destruction of necrotic tissue and stimulates to reparation; its action is under perfect control; it does not leave an opaque cicatrix; it is painless, and the reaction is moderate; it is inexpensive and easily obtained. Johnson has employed nitric acid as a cautery for 10 years in many cases with the best possible results. His method is as follows: He makes a dilution of the chemically pure acid varying in strength from 9 to 15 %, according to the effect desired. He shapes a piece of soft wood to a point suitable to the case. This he dips in the dilute acid, and withdraws, being careful that no excess of liquid adheres to the stick. The cornea is cocaineized, and the point is deliberately applied to the ulcer until the destroyed tissue turns white. The eye is then washed with water or a saline solution. The application is painless and reaction is moderate. The cauterization may be safely repeated if necessary. The separation of the slough is speedy, and the ordinary after-treatment is indicated.

The Treatment of Ophthalmia Tarsi. Phillips (*Brit. Med. Jour.*, Feb. 18, 1899) believes this disease to be distinctly eczema of the lid, and

states that pustular eczema often co-exists on the beard, eyebrows or temporal scalp. He emphasizes the importance of the oleate of mercury ointment in the treatment of all forms of blepharitis, and claims that it is more penetrating than the insoluble oxid generally used. He employs a 1 % ointment, the base being paraffinum molle, and, in order to secure intimate mixture, the oleate and paraffin are best melted together. The ointment may then be considered an unirritating disinfecting, penetrating, soluble salt of mercury. Not only the margins, but the surface of the lids should be anointed, and the treatment should be persisted with at night long after apparent cure. For the hyperemia of the early stages, and for the removal of crusts, hot boric acid lotion is used.

An Abortive Treatment of Gonorrheal Ophthalmia. Jamison (*Med. Rec.*, June 10, 1899) describes an abortive treatment by a cantholysis and thorough application of silver nitrate, 40 gms. to the ounce. He believes that even in cases of doubt, when bacteriologic examination is not obtainable, this treatment is advisable, for if the case is gonorrheal a severe disease will be aborted, and if it is simple acute catarrhal conjunctivitis the reaction, while great, lasts only a few hours under the vigorous use of iced cloths. The treatment is conducted in the following way: Cleanse the eye thoroughly with a solution of boric acid; take a strong pair of scissors, preferably straight with blunt points, placing one blade beneath the palpebral conjunctiva at the outer canthus, making the cut directly outward through the skin and conjunctiva. Then, grasping the upper lid with the other hand, pull it forward and upward; in doing this you put the tarsal ligament on the stretch, and it can readily be found between the skin and palpebral conjunctiva. This is cut by a smaller pair of scissors, and then the upper lid becomes loose and the surgeon is enabled to expose thoroughly the upper conjunctival cul-de-sac and so to lessen the pressure on the lymphatics supplying the cornea. Should there be much swelling and chemosis following the application it is not necessary to stitch the edges of the wound together, as only a temporary effect from the operation is desired. The application of nitrate of silver (gr. xl to ʒi) should be made with a small pledget of cotton on an applicator, the surgeon being careful not to touch the cornea. Immediately neutralize the silver with a solution of sodium chlorid, then begin the application of iced cloths, changing them every 10 seconds until the reaction has subsided; in the meanwhile the eye is kept clean with a saturated solution of boric acid. It is rarely necessary to make a second application in 24 hours. In the cases so treated by Jamison there was but slight discharge on the second day, and the reaction subsided rapidly under the vigorous use of iced cloths. The small operation on the external canthus (cantholysis) is done with slight pain to the patient by the subcutaneous injection of a 4 % solution of cocain, and as the result of this treatment depends entirely upon the thorough application of silver, Jamison considers the preliminary operation very essential, as it enables the surgeon thoroughly to expose the conjunctiva, which is otherwise impossible.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Therapy of Suppurating Inguinal Lymphadenitis. Brandl (*Allg. Wiener Med. Zeit.*, Aug. 29, 1899) advocates free incision, curetting, injection into the abscess cavity of iodoform, glycerin, iodovasogen, or airoil emulsion, and loose gauze packing. In cases of unilocular abscess cavity Lang's procedure of minute incision and injection of a 1% silver solution is advised.

Gangrene of the Male External Genital Organs. Petit and Merklen (*Gaz. des Hop.*, Aug. 12, 1899) offer a classification of this form of gangrene, giving four groups according to the causes, *i.e.*, gangrene of urinary, genital, and general (from dyscrasia, infections, trauma) origin, and spontaneous fulminating gangrene. Gangrene of urinary origin follows traumatism and strictures, with a development of bacteria in the extravasated blood and urine, and presenting symptoms of a rapid relief from previous retention of urine with the appearance of a perineal tumor rapidly becoming gangrenous, involving penis, groins, or abdominal walls, and accompanied by symptoms of sepsis. This group demands a conservative prognosis. Gangrene of genital origin follows paraphimosis and venereal ulcerations, especially chancroids, with gangrene of the prepuce and symptoms of severe general infection, but having a favorable prognosis. Gangrene depending on general diseases complicates diabetes, malaria, typhoid fever, scorbutus, and other states, but presents no special characters. The prognosis is conservative. Spontaneous fulminating gangrene is probably due to a virulent streptococcus infection, has a mild beginning and suddenly develops into a gangrene tending to involve all the external genitalia and giving rise to severe general symptoms. Treatment consists in the use of the thermo-cautery, free incisions, removal of mechanical obstacles to the circulation, and attention to the general condition.

A New Method of Drainage of the Urinary Bladder, with Prevention of Urinary Infiltration after Suprapubic Cystotomy. This method, given by C. Kaczkowski, depends upon the application of an apparatus consisting of a rubber balloon and a Bunsen aspirator. The balloon consists of a lower part which is placed within the bladder, and an upper

part which is placed so as to be partly between the edges of the wound and partly lying on the outer surface of the abdominal wall. Both parts communicate by means of a thin shaft. Through the whole ball passes a stiff-walled tube of large caliber, which, after emerging from the lower part of the balloon, is bent forward. On this curve is a lateral opening. After *sectio alta* the collapsed balloon is placed in the wound in such a manner that its lower part lies within the bladder; after inflation of the balloon by means of a syringe the bladder wall is lifted forward and presses closely against the abdominal wall, obliterating the space of Retzius. By means of an aspirator the urine is conducted from the bladder through the stiff-walled tube.

Acute Gonorrhea: Its Prevention and Cure. Youmans (*Jour. Cut. and Gen.-Urin. Dis.*, Aug., 1899), in regard to the prevention of gonorrhea, advises a more thorough sanitary supervision and regulation of prostitution; those found to be infected should be compelled to undergo a prolonged course of treatment, with repeated subsequent observations before being allowed to resume sexual relations. The treatment recommended consists in daily irrigations of permanganate of potash, 1-8,000, following each irrigation by an injection into the urethra of a 2% protargol solution. The penis is bandaged tightly to hold protargol solution in the urethra. The patient is considered cured when, after every test known to the bacteriologist is employed, no gonococci are found in the urethra.

Genito-Urinary Pain. P. C. Fenwick (*Australasian Med. Gaz.*, May 20, 1899) calls attention, in the above article, to the great importance of a knowledge of the nerve supply, and of the nervous routes through which the sensation of pain is conveyed in various diseased conditions of the genito-urinary system. The sympathetic nervous system being no longer regarded as a separate nervous organization, but merely the visceral division of the central nervous system, it follows that any irritation of the sympathetic nerve produced by diseased abdominal viscera will be conveyed to the spinal cord and there reflected to certain spinal nerves, and find expression in that part of the body supplied by that nerve. In this way Fenwick explains (1) the pain in the heel felt at times in cases of urethral inflammation, (2) the pain in the back in congestion of the kidneys and in lithemia; (3) the pain in the penis, testicles and groin in renal calculus; (4) the pain at the end of the penis in vesical calculus, and in disease of the prostate.

Cystitis: Its Cause and Treatment. Howland (*Med. News*, July 15, 1899) gives the following facts as the cause of cystitis: (1) Cystitis is always caused by the presence of micro-organisms, chiefly the colon bacillus, streptococcus pyogenes and staphylococcus pyogenes. (2) The mere presence of bacteria is insufficient to cause cystitis; a further predisposing cause is necessary, such predisposing cause being always congestion. (3) Under favorable conditions, any pathogenic micro-organism may cause cystitis. (4) The entrance of organisms may be through the urethra, through the ureter, and through lymphatics. In the treatment of acute

cystitis, rest in bed is advised, together with the use of opium and belladonna either by the mouth or in the form of suppositories. Occasionally, in severe cases, instillations into the deep urethra of a few drops of a 4% solution of cocain are to be used. No local treatment to the bladder itself is advised in acute cystitis. In the chronic form of the affection, the author uses daily irrigations of the bladder with either salicylic acid, nitrate of silver or bichlorid of mercury. Urotropin is employed internally in 7 gr. doses, as a genito-urinary antiseptic.

GYNECOLOGY.

UNDER THE CHARGE OF

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The Surgical Treatment of Fibromyoma. Schauta (*Internat. Cong. Rep.*) contributes the result of his personal experience, founded on 424 cases of operative treatment of myoma uteri with opening of the peritoneum, in 2,263 peritoneal operations performed by him. His conclusions on the surgical treatment of these neoplasms are as follows: (1) Operative treatment of fibroid tumors is not legitimate except when they are the cause of troubles that cannot be conquered by other means. (2) Vaginal total extirpation should be considered as the safest, and, in the long run, most successful operation. It should be performed in all cases when the tumor does not extend above the level of the umbilicus, and when it can be easily drawn into the small pelvis. (3) For large, not easily movable tumors, wholly or partially intraligamentary, abdominal total extirpation should have the preference. (4) Supravaginal amputation with intraperitoneal treatment of the stump, gradually should be set aside in favor of abdominal total extirpation; although the immediate results of the former are sometimes more favorable, it has been proved that there are more chances for absolute recovery when no part of the cervix has been allowed to remain. (5) In emergency cases, supravaginal amputation with extraperitoneal treatment of the stump affords facility for speedy and absolute extraperitoneal execution, and offers an advantage not to be underrated, in cases of extreme anemia, asphyxia, weakness of the heart, and suppuration or necrosis of the tumor. (6) Vaginal enucleation of broad-based, sub-mucous tumors, either by way of the dilated cervix, or by the vaginal fornix, after anterior or posterior kolpotomy, with or without opening of the peritoneum, should be resorted to only in cases where there are special indications. Myomata being gen-

erally multiple, it would not be likely that the operation would afford durable results, and therefore cannot be considered as less dangerous than the radical operation, with removal of the uterus. (7) Curettage should be looked upon as an uncertain mode of treatment, not wholly free from danger, and should be limited to rare cases of beginning myomatous development. (8) Castration should be strictly objected to on the ground of its not bearing comparison with the radical operations with regard to reliability and immunity from danger. In quite exceptional cases, when it is not possible to perform supravaginal amputation with extraperitoneal treatment of the stump, it may now and then be resorted to. (9) It is not to be thought that the methodical use of forcipressure affords the patient advantages over the use of ligatures, except in so far as they facilitate a speedy operation in atypical cases. In cases of emergency or danger their use is certainly to be justified. (10) The full value of drainage of the supravaginal wound for furthering throughout the chance of asepsis, in abdominal as well as in vaginal total extirpation, should be always kept in mind. (11) The question if removal of the ovaries should be performed, with vaginal or abdominal total extirpation, is not yet decided. Climacteric symptoms (*Ausfall-erscheinungen*) have been observed either way. If the ovaries are removed, these appear immediately; if left behind, after weeks and sometimes months.

On the Relative Value of Antisepsis and Improved Technique for the Actual Results of Operative Gynecology. Bumm (*Internat. Cong. Rep.*) after a year's bacteriological research, made during a great number of operations from beginning to end, of the skin of the hands as well as the operation field, the wound, the instruments, the dressing, and ligature-material, gives the following results: (1) There is no way to remove with certitude all micro-organisms from the hands. The successive use of soap and hot water, of alcohol, and of a solution of lysol or sublimate, for ten minutes each, is not sufficient to sterilize the skin with certainty. For these experiments rigid precautions, as prescribed in Hagler's method, are necessary to obtain satisfactory results. Above all, it is not sufficient to examine only a small part of the hands, but to remove the adhering remainder of the sublimate, and to take into account the shriveling of the skin by the alcohol. (2) The same conclusion is to be drawn with regard to the skin of the rest of the body and especially for the external genitals, the perineum, the vagina, etc. (3) During the course of the operation we find on the instruments and ligatures and in the wound principally the micro-organisms originating in the deeper parts of the epidermis and from the glandular ducts. In 50 great operations, under exact control, none were found entirely free from the presence of micro-organisms. (4) With the "aseptic" method, even when the operation is made in the best conditions and with the greatest precautions, the number of micro-organisms is far higher than that which is found in using the antiseptic method. At the end of the operation the so-called sterile salt solution contains regularly micro-organisms and sometimes in great number. (5) The micro-

organisms of the atmospheric dust are of but small importance in the infection of operation wounds. (6) Difficult as it is to operate without giving access to the micro-organisms, it is still more so to keep them away from the wound and its surroundings for a longer amount of time. It is therefore illusory to think that either asepsis or antiseptics can bring about a sterile condition of the wounds. According to circumstances, there will be in every wound more or less bacteria. In spite of this proved presence of micro-organisms, most wounds heal without suppuration or fever. This result is due to the bactericidal power of the organism.

OBSTETRICS.

UNDER THE CHARGE OF

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Vaginal Douches, Ante-Partum and Post-Partum. Boston (*N.Y. Med. Jour.*, No. 23, p. 816) states that the objection to employing ante-partum douches holds good in a great measure in regard to the use of post-partum douches. The post-partum intrauterine douche, however, may be of use in removing particles of placental tissue and membranes and of stimulating the uterus to contract, thus controlling hemorrhage. After sepsis has developed, it may be of service in removing toxins. The intrauterine douche is unnecessary after the hand has been introduced into the uterus, as it can do no good. The douche does not even attempt to remove bacteria after a uterus has once been infected. This is also true of curettment. The author has made cultures from the gauze removed from the uterus 12 to 24 hours after curettment and always found the same bacteria present as were found before the operation. He summarizes as follows: (1) A profuse leucorrhœa during the latter months of pregnancy is no indication for vaginal douching. (2) The chemical reaction of a discharge has but slight effect upon its antiseptic powers. (3) The vaginal secretions of pregnant women rarely, if ever, contain pathogenic germs, except gonococci. (4) Vaginal douches favor the development of cervical gonorrhœa and puerperal sepsis. (5) The vaginal secretions may contain streptococci, staphylococci, diplococci, and bacilli, all of which may be non-pathogenic. (6) A discharge from the cervix may show the presence of pathogenic bacteria after all other symptoms of sepsis have disappeared.

Alcohol in Sterilization of the Umbilical Stump. Ahlfeld (*Monats. für Geburts. u. Gynak.*, July, 1899) writes of the utility of alcohol as a dressing for the umbilicus. He first cuts the cord 8 c.m. from the

abdomen and treats it with 3% Kresol soap. After the child is washed, he re-ligates the stump about 2 c.m. from the abdomen. The whole umbilical region is then treated with 96% alcohol and dressed with sterile cotton, fastened with a rolled bandage. The child is not bathed until the cord drops off. Ahlfeld states that he has used this method for many years with perfect results.

Symphysiotomy after the Death of the Fetus. Gaulard (*Soc. d'Obstet., etc.*, 1899, p. 120) records a case of symphysiotomy performed in a double oblique, oval pelvis. In 1893 Queirel, of Marseilles, wrote to Pinard in regard to performing symphysiotomy after the death of the child, and Pinard disapproved of the propriety of such a procedure. Gaulard believes that in a pelvis of this class the operation is justifiable, because of the difficulty encountered in using the basiotribe, symphysiotomy being a much simpler operation. He prefers symphysiotomy to Caesarian section, because it is much more readily performed and because it is more readily accepted by the public and easier for the young practitioner.

Behavior of the Uterine Mucosa after Abortion. Polano (*Zeitsch. f. Geburts. u. Gynak.*, Bd. XLI., No. 1) states that after a complete emptying of a five-months pregnant uterus, the mucosa is regenerated in 8 days. The inter- and intramuscular tissue forms the new stroma, the superficial portion undergoing hyaline degeneration. New glands are formed from solid epithelial processes which dip down into the stroma. When the uterine cavity is curetted regeneration occurs more rapidly than after spontaneous expulsion. Syncytial migratory cells are no longer visible after the eighth day, while only a minimum of decidual tissue remains. In cases of vesicular mole, 8 days after removal no proliferating remains of fetal tissue are found. The regenerated mucosa after mole-formation cannot be distinguished from the normal.

Disinfection of the Hands. Tjaden (*Zeitsch. f. Geburts. u. Gynak.*, Bd. XLI., No. 1) has made an especial study of the best means of disinfecting the hands of midwives, and he has come to the conclusion that mechanical measures are more important than chemical ones. He says that all measures conjoined can but accomplish relative security, therefore it is most important to emphasize the usefulness and the necessity of abdominal palpation as a means to diagnosis instead of the intravaginal touch.

Phlegmasia Alba Dolens. Burns (*Denver Med. Times*, July, 1899) treats this condition in the following manner: As soon as the diagnosis is made he cures the infected area of the birth canal. Three times daily the limb is to be bathed with hot water; the hips are brought to the edge of the bed and the foot placed on a chair while a bowl of hot water is placed beneath the leg, which is wrapped with one thickness of woolen cloth, the water being allowed to drip on the wrapping from a sponge. This is kept up for half an hour, and the water should be as hot as can be endured. After each bathing, the limb is wiped dry, turpentine or camphorated oil applied, and the dressing completed with cotton batting. The bowels must be kept free. When the tenderness subsides cold water and massage are indicated.

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A large amount of space is occupied in this issue of the INTERNATIONAL by the masterly Hunterian Lecture by our distinguished collaborator, Dr. A. Ernest Sansom, of London, on the "Effects of Influenza upon the Heart and Circulation; their Clinical Manifestations and their Treatment." This is so exhaustive, so interesting, and so authoritative an exposition of a very important subject, that no apology is deemed necessary for permitting it to crowd out much other valuable matter, which will appear in subsequent numbers

**Dr. Sansom's
Lecture.**

There has been a wide divergence of opinions as to the percentage of free hydrochloric acid that should under normal conditions be found in the gastric contents at the height of digestion. This is a highly important practical question in the treatment of dyspeptic ails, since it is customary to prescribe somewhat active remedies to correct either a marked excess or deficiency of this essential ingredient of the gastric juice. Naturally, therefore, it must make a decided difference whether the normal proportion of free hydrochloric acid be considered to be from 0.025 to 0.05 or from 0.1 to 0.2 per cent.

**What Constitutes
an Excess of
Hydrochloric
Acid?**

A series of experiments lately carried out by B. K. Rachford and reported in the *American Journal of Physiology* (Vol. II., No. 5) go far toward finally settling this question at the same time that they emphasize strongly the previously known fact that an excess of free acid passing from the stomach into the bowel is liable seriously to derange the intestinal digestion.

Rachford demonstrated that free hydrochloric acid in a 0.1 per cent. solution retards greatly the diastasic action of the pancreatic juice. In several of his experiments this action was almost destroyed by such a solution. These results warrant the inference that a proportion of free hydrochloric acid, amounting to 0.1 per cent. or more is dangerously excessive. And this we should expect on *a priori* grounds. The function of the acid in the gastric juice is, aided by the pepsin, to form chemical compounds with the albuminoids of the food in the stomach. When all these have been saturated toward the end of the digestive period, there is no longer anything for free hydrochloric acid to do except the injurious action of disturbing the alkalinity of the fluids in the duodenum and irritating the intestinal mucous membrane, thus provoking intestinal catarrhs, both directly and through the irritant influence of the undigested food. A slight excess of

acid shows that there has occurred a complete saturation of the albuminoids, and is therefore enough. Such a small excess is easily neutralized in the duodenum by the various alkaline secretions which meet it there.

The contention of many authorities that a proportion of free hydrochloric acid in the stomach amounting to from 0.1 to 0.2 is normal, was based upon experiments in part upon dogs, which are not a criterion for the human race, and upon alleged healthy men who were evidently not healthy. In some of the more recent experiments to determine this point, the subjects were medical students under a high pressure mentally, and living more or less irregular lives because of the unaccustomed conditions to which most of them were subjected away from home in a large city. To test this matter properly in perfectly normal stomachs, one would need to analyze the gastric contents of twenty or thirty young persons in full, vigorous health, whose muscles are being regularly and sufficiently exercised in the open air, persons who eat moderately of a not too stimulating food, eschew the sharper condiments, alcoholic liquors and tobacco, and are subjected to no mental strain or to any unusual nervous or sexual excitement. Then the results would be trustworthy.

No such tests in any considerable number have been made, so far as we know; but Rachford's experiments prove decisively, regardless of what we have been led to consider normal, that 0.1 per cent. of free hydrochloric acid is excessive and liable to prove, as clinical experience often shows, very injuriously so.

Nor is it any answer to this to object that many apparently healthy persons show constantly a higher percentage of free hydrochloric acid. Nature is lavish in her safeguards, and, for a time, a copious secretion of an active bile and pancreatic juice may succeed in neutralizing even a very large excess of acid in the bowel; but there comes a time when these alkaline fluids fall off in quantity and activity, and fail, therefore, to protect longer the intestinal digestion, just as there comes a time when the over-taxed muscles of accommodation in eye-strain give out, and then for the first functional trouble results.

It should be obvious to all that the reading columns of a respectable medical journal are not for sale. The advertising pages are well understood to be open for the publication at a price of any claims or statements within reasonable bounds that may be made by any persons having wares to sell. Advertisers in this way pay certain fixed prices for the control during definite periods of certain amounts of space in which they are privileged to insert whatever representations or arguments they think will prove most convincing to the readers of the journal.

**Advertisers in the
Role of Editors.**

While the great majority of decent advertisements—the only kind that are accepted by the publishers of reputable medical journals—are trustworthy, confirmatory testimony from impartial outsiders is naturally wel-

come. And it does happen now and then that a new remedy or new method of treatment is brought forward which effects such remarkable results that the conscientious physician is impelled, in the interests of suffering humanity, to report his results with it, in an article specially devoted to the subject.

When, however, the results of the trial of new remedies are not sufficiently favorable to evoke spontaneous tributes, the proprietors in many instances nowadays undertake to arrange for them. A physician is found who can be employed for a consideration to write an article containing a series of reports of alleged cases in which the new medicament is usually represented as having produced quite extraordinary and unprecedented results. The best medical journals do not accept such one-sided clinical reports, the *raison d'être* of which is detectable at a glance, but others do, and doubtless, at first, some readers are influenced thereby in the direction desired.

But, in a little while, the trick is discovered. Readers learn that these enthusiastic reports are written by paid advocates, and therefore are to be classed simply as advertisements. In the end, therefore, it must become unprofitable even to the advertisers themselves to encourage such a debasement of medical journalism. Every physician ought to feel it to be a privilege and a duty as well to write frankly and freely for or against every new preparation or instrument which he has tried thoroughly, devoting to it as much space, whether incidentally or otherwise, as its importance demands. But if articles which are transparent advertisements continue with increasing frequency to appear in the reading pages of medical journals among scientific papers, those who respect themselves will hesitate to record favorable experience, even when it is fully warranted, for fear of their motives being questioned.

The foregoing reflections have been suggested by a communication recently received from the representatives of a prominent firm, asking as a condition precedent to sending their advertisement to this journal, that the editor should write an article on their specialty, "to occupy from two to two and a half pages, of such a character as to furnish information of interest to his readers and in no sense appear as advertising, but as a contribution stating the writer's own experience with . . . or his personal knowledge of its value to the medical profession. For such an article, if it met with their approval (as it would be necessary, of course, to submit it to them before insertion), they would authorize us to pay a reasonable price." Then follow these questions:

"Are you willing to prepare such an article, and, if so, what would be your price?"

It is humiliating to have to infer from this letter that there must be medical journals whose editors are willing to enter into such commercial arrangements, including the relegation to advertisers of the duty of passing upon and revising fictitious articles written to order for insertion among legitimate papers or clinical reports.

And the strangest part of it is, that an advertiser should consider as worth buying any medical journal edited in such a manner.

EDITORIAL MENTION.

IN Germany the use of beer and wine as beverages is possibly more general among all classes of the people and in both sexes than in any other country. Beer may be considered as the national drink, and even the young children are often taught to take it with their meals. Yet, being a most philosophic people, the Germans are beginning to learn that such a wholesale consumption of alcohol is capable of doing serious harm. When in Germany a year ago, the writer saw prominently displayed in the waiting-room of a distinguished physician pamphlets urging strongly the harmfulness of giving alcoholic beverages to children. And now we notice that during the time of the recent annual meeting in Munich of the German Association of Scientists and Physicians, there was held in the same city in the assembly-room of the division for psychiatry, the fourth annual meeting of the "Society of Abstinent Physicians." On this occasion the president, Prof. Dr. Kraepelin, of Heidelberg, delivered an address on "The Influence of Alcohol on Man." This address bristled with points which would have delighted the most intense of our American temperance reformers, showing, among other things, that under the continued use of alcohol "mental ability steadily sinks." On the same occasion Prof. Bunge, of Basel, brought forward statistics tending to prove that the progressive loss during the past five hundred years of the ability of women to nurse their children, is in part due to the effect of alcohol, the injurious results having become hereditary. Extensive observation by him showed that of the women who could nurse their children, 68% were abstainers and none were drunkards, while of the other class only 35% were abstainers, 58% moderate drinkers and 6% hard drinkers.

PROF. GRASSI, of Rome, discussed the cause of malaria at the meeting of the German Association of Scientists and Physicians, held in September. He maintained that Koch was wrong in holding that the malarial parasite of man passes through identical stages of development with Ross's bird parasite; also that Koch erred in believing that the ordinary mosquito is a carrier of the disease. That this view of Koch's was erroneous is proved by many well-known facts. For instance, mosquitoes were very prevalent in Atlantic City in its earlier days, and occasionally still, in the latter part of unusually moist summers may be troublesome there for a few days at a time during a land breeze; and yet few climatic facts are better attested than that the place has, for twenty years past at least, been entirely free from the malarial diseases. There are certain species of the mosquito, not all of them, which are capable of infecting their victims with the malarial parasite.

BOOK-REVIEWS.

PROGRESSIVE MEDICINE—VOLUME III. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 440 pages, 11 illustrations. Philadelphia and New York, Lea Brothers & Co.

This volume shows no falling off in the character of its contents. It includes papers upon the following subjects: "Diseases of the Thorax and Its Viscera, including the Heart, Lungs and Blood Vessels," by William Ewart; "Diseases of the Skin," by Henry W. Stelwagon; "Diseases of the Nervous System," by William G. Spiller, and "Obstetrics," by Richard C. Norris. All of these are carefully prepared compilations of the best things in recent medical literature bearing upon the several subjects. Ewart's article is most thorough and exhaustive, covering the whole ground of etiology, diagnosis and treatment in a most comprehensive way.

A COMPEND OF GYNECOLOGY. By Wm. H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, etc. With illustrations. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. 1899. 80 cents.

Gynecology is one of the specialties which most general practitioners deem it necessary to learn a good deal about. There are few who do not feel themselves competent to use the speculum and intrauterine sound, even when they draw the line at the stomach tube, notwithstanding that uterine displacements are generally secondary to gastroptosis, and catarrh of the womb much less injurious in its results upon the general health than catarrh of the stomach. Hence such books as this should be popular, since they contain in brief form and plain language most of the essentials of gynecology. The second edition of the compend before us, one of the best of its class, contains some noteworthy additions, and the index prepared by Dr. L. F. Appleman is particularly complete.

HANDBOOK OF OPTICS FOR STUDENTS OF OPHTHALMOLOGY. By William Marwood Suter, B.A., M.D., Professor of Ophthalmology, National University, Washington, D.C. New York, The Macmillan Co. 1899. \$1.

The author has endeavored to give in this small book a resume of that part of the science of optics that pertains directly to ophthalmology. The demonstrations, which may at first glance seem very formidable to the medical student who aspires to proficiency in ophthalmology, require no especial knowledge of mathematics beyond that of simple algebraic equations and the elementary truths of geometry. For those who may not be familiar with trigonometrical ratios, a brief synopsis has been furnished in an appendix. A uniform notation,

with which the student will easily become familiar, has been preserved throughout the book; by this means those who may be indisposed to follow the algebraic processes in detail will be aided in understanding the methods of demonstration. While much of the matter given may be found in the standard text-books on ophthalmology and the majority of it is of little practical use to the oculist, yet there are found all through the text lucid explanations of several important and much neglected topics, such as the different dioptric states of aphakic eyes in emmetropia, hyperopia, and myopia. It would be well for some of the surgeons who are now in the habit of removing the crystalline lens in high myopia to familiarize themselves with the very satisfactory explanation of the remarkable optical results of the operation in cases of from 20-24 diopters of axial myopia (pages 100-105). Other topics of practical interest not commonly explained are "The Effect of Lenses upon the Size of Retinal Images" (p. 109), "The Twisting Property of Cylindrical Lenses" (p. 138), and "Oblique Refraction through Lenses" (p. 163).

The book is well-written and the letter-press is excellent. Although it is not a necessity to students of ophthalmology, it will be of use to those who desire to extend their knowledge of the mathematical and physical part of their specialty.

A COMPEND OF THE DISEASES OF THE EYE AND REFRACTION; INCLUDING TREATMENT AND SURGERY. By George M. Gould, A.M., M.D., formerly Ophthalmologist to the Philadelphia Hospital, etc., and Walter L. Pyle, A.M., M.D., Assistant Surgeon to Wills Eye Hospital, Philadelphia, etc. Second edition, revised and enlarged. 109 illustrations. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. 1899. 80 cents.

This admirable compend has been reset in larger type and otherwise considerably improved since the appearance of the first edition. The section on "Local Ocular Therapeutics" has been increased to include all the recent mydriatics and other late additions to the remedies employed locally in and about the eyes. It is a very useful little book, which not only students but general practitioners should have at hand.

THE TREATMENT OF PELVIC INFLAMMATIONS THROUGH THE VAGINA. By William R. Pryor, M.D., Professor of Gynecology, New York Polyclinic; Consulting Surgeon, City (Charity) Hospital; Visiting Surgeon, St. Elizabeth's Hospital, New York City. 8vo, pages 248. Philadelphia, W. B. Saunders.

While the contention as to the relative merits of the abdominal or the pelvic route for the operative relief of utero-ovarian disease is by no means at an end, there is a growing appreciation of the fact that those who practice either method exclusively do so to the serious detriment of certain of their patients. Although the merits of the vaginal route have been depreciated upon the one hand and exaggerated upon the other, it is now evident that, for a considerable proportion of the more acute and septic inflammation in the pelvis, this method is life saving. Even if it be proved that the procedure is not ultimately curative; if it offer an escape from an impending fatal issue it is not to be disdained. We have in this little book a very explicit and practical

description of the procedure successfully employed by the author in the treatment of pelvic inflammation. The tone of the work is aggressively surgical, and if the author's diction lacks elegance his descriptions are at least expressed with clearness and force. The operation given especial prominence involves an incision through the posterior cul-de-sac. Dr. Pryor considers this incision to be free from danger and strongly advocates it for purposes of pelvic exploration and drainage, and for conservative and radical operations upon the uterine appendages. A method of vaginal hysterectomy with clamps is used for many of the conditions for which the operation through the cul-de-sac is insufficient. We believe the work has a distinct value in emphasizing a branch of gynecology that has not been given sufficient attention in the general text book. Although exception may be taken to some of the author's views, there is much to commend, and the book may be read with profit by all who practice gynecology. The work is well illustrated and well printed.

GENERAL PHYSIOLOGY: AN OUTLINE OF THE SCIENCE OF LIFE. By Max Verworn, M.D., Ph.D., A.O., Professor of Physiology in the Medical Faculty of the University of Jena. Translated from the Second German Edition and Edited by Frederic S. Lee, Ph.D., Adjunct Professor of Physiology in Columbia University. New York, The Macmillan Co. \$4.

This book is one of the important landmarks of the rapid progress of our science. It represents a new era in our scientific advancement on the lines of inductive investigation. As soon as a particular science becomes broad enough, differentiation takes place, specialism arises, and each specialty is worked out independently until a sufficient number of facts is accumulated in each particular branch to permit of a general classification, and by induction a system of general principles is again established. It is this ever-recurring cycle that led up to general physiology. Just as special anatomy finally developed into biology, special physiology, the physiology of plants, animals, etc., culminated in general physiology. This transition from the part to the whole was made possible by our discovery of the unit of the living organism—the cell. The cell is the prototype of the organism, which, after all, is only a compound of cells differing from each other in their special but not general functions. The cell is the seat of physiologic as well as pathologic activities. It is the acceptance of this cellular unit as the basis of organic life that constitutes the stronghold of scientific pathology. The recognition of the cellular theory of disease so vigorously propagated by Virchow wrought a great change in the science of medicine. Infectious diseases owe their origin to bacteria which are unicellular micro-organisms, while phagocytosis is one of the manifestations of the cellular life of the leucocytes. The importance of these latest discoveries is appreciated by all. In order that the abnormal may be understood, the normal should first be known. The study of general physiology should, therefore, precede the study of general pathology, and the scientific physician will gladly avail himself of the opportunity to become familiar with the important subject of general physiology so masterfully epitomized in this book.

In the six chapters, covering about 600 pages, the author discusses the sub-

ject in its entirety. Chapter I. is devoted to the aims and methods of physiological research. In Chapter II. living substance is discussed, including a treatise on the composition of the cell and the differentiation between living and non-living matter. Elementary vital phenomena are considered in Chapter III. Here the phenomena of metabolism, the phenomena of form changes and transformation of energy are ably treated. In Chapter IV. the general conditions of life and the various theories concerning the origin of life are fully represented. Stimuli and their action form the contents of the next chapter, while the description of the mechanism of life, including a discussion of the vital process, the mechanics of cell life and the constitutional relations of the cell-community, complete this able treatise. An extensive bibliography and numerous illustrations are additional very desirable features. The entire book bears the stamp of thoroughness so characteristic of the German scholar. The translator deserves double credit—for bringing this book within the reach of the English-speaking scientist and for doing the work of translation so well. The publishers also are entitled to commendation for the mechanical appearance of the volume.

SIXTEENTH REPORT OF THE STATE BOARD OF HEALTH AND VITAL STATISTICS OF MINNESOTA. St. Paul, Minn. 1898.

This report presents a summary of the work performed during the period under consideration. Besides the statistical reports, it deals elaborately with the creditable original research which has been conducted in the various laboratories under the control of the board.

Much of the work reported is necessarily the routine work which modern scientific preventive medicine and sanitation has made so essential to the health of the community; work that can be conducted only by well-organized and well-equipped laboratories under State control and patronage. This report is a convincing illustration of the value of such laboratories to the State and people, and shows their value, not alone for prosecuting the routine work that is so essential, but by fostering original research, work which has more than a local value, and aids the development of scientific medicine and its application to medicine everywhere.

This is well illustrated by the exhaustive papers on the serum diagnosis of typhoid fever, which point out the value of the method and illustrate the value of such laboratories to the physicians of the State, while detailing the methods that ought to be employed in obtaining and forwarding specimens for diagnosis. The value of laboratory work is here again illustrated by the results which followed the collection of the large number of cases reported and the statistics secured.

The same is true of diphtheria, and many of the contagious diseases that are found among the domestic animals. In all these, and the many other departments, the value of this work and of such reports is manifest. As is evident in many such reports, these labors have been carried out under difficulties, but with an apparent education of the public mind, which, when it has progressed, will result in an enthusiastic financial support.

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ORIGINAL PAPERS.

GALL-STONE CREPITUS AND FRICTION, WITH ILLUSTRATIVE CASES.¹

BY J. M. ANDERS, M.D., LL.D.,

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Medico-Chirurgical and Samaritan Hospitals,
Philadelphia, etc.

It has been said by some writers that gall-stone crepitus is a most valuable symptom, but the literature is practically silent upon the subject. The presence of this sign has been noted in a comparatively small percentage only of the cases of cholelithiasis, and I have a fixed belief that it is not so constantly searched after as its diagnostic value deserves. The symptoms of gall-stones are often not sufficiently distinctive to render a diagnosis certain, and, in such cases, the recognition of this symptom is of the utmost importance. I have, however, been much interested in a few cases in which the gall-bladder contained calculi that could be palpated, and in all of which a grating sensation could be elicited in the absence of any features of cholelithiasis. Brockbank, in speaking of latent calculi in the gall-bladder, refers to cases that have been recorded in which the stones were felt like nuts in a bag. Old persons may harbor benign calculi owing to lack of muscular force to expel the stones. Frequent and patient practice has taught me that, when calculi can be felt, it is rare that crepitus is absent.

There is in all cases a period of latency during which the stones lie in the seat of their development, usually the gall-bladder. This period may persist, and the patient die at last of some intercurrent affection; more commonly it is succeeded, at varying intervals of time, by attempts on the part

¹ Read at a meeting of the Philadelphia County Medical Society, October 11, 1899.

of the stones to pass out of the portal system, and, as a rule, into the intestinal canal. Modern investigations tend to show that mobile calculi result from infectious cholecystitis, in the presence of which the stones act as irritating foreign bodies; also that gall-stones are produced by this condition. Once the calculi become migratory, in my experience, they are apt to continue so until the condition has been in great part relieved. It is to be emphasized that, after repeated attacks of biliary colic, the ducts become patulous or enlarged from the distending force of the stones, subsequently allowing bodies of considerable size to pass without exciting pain. In latent gall-bladder calculi, and in those in which stones make their exit without pain, the detection of crepitus and friction have no clinical significance; they merely indicate the presence in the viscus of gall-stones. Here should be mentioned the fact that cholecystitis without the presence of any calculi may occasion symptoms of cholelithiasis, but this is not, in my experience, at least, a common occurrence.

Large calculi have been found on *post-mortem* examination in cases in which vague symptoms only were complained of during life. Sometimes a calculus in the neck of the bladder acts like a ball-valve, either giving rise to indefinite symptoms or more rarely presenting no indications of its presence. Eagelson has reported an interesting case of gall-stones in the common duct, with ball-valve action. There was chronic jaundice, and attacks of colic; after the latter ceased the liver appeared to be slightly enlarged, without recognizable tumor in the region of the gall-bladder. At this time the patient developed a rigor every second or third day, followed by a temperature ranging from 102° to 103.5°. "After complete rest in bed for a few weeks she improved in color, and the character of the stool showed that some bile was passing the obstruction. She returned to her home, but as soon as she left her bed the jaundice began to increase and the stools to lose their color again. The return to bed improved the symptoms again. This was repeated two or three times, showing that the obstruction in the duct was much less in the recumbent position than when the patient was up around the house." Pain was absent, but the presence of the floating choledochus stone with ball-valve action was diagnosed notwithstanding, and this was confirmed by operation. Osler and others have reported similar cases. All clinicians of wide experience have met cases in which the features of gall-stones in the common duct as the cause of a chronic jaundice have been too incomplete for an assured diagnosis.

I am reminded here of a case of my own that showed the constant presence of bile in the feces, and of another in which the liver was decidedly enlarged (contrary to the general rule), with slight variations in the intensity of the icterus. Now, it is in all of these anomalous instances that the presence of crepitus is an invaluable symptom for diagnosis. The difficulty that surrounds the diagnosis may be illustrated also by an allusion

to a case of pancreatic disease reported by Franklin E. Wallace, in which, during life, a tentative diagnosis of gall-stones had been made. The patient was a woman, *aet* forty-six, who had had several prior attacks of pain in the epigastrium, and jaundice, was seized with pain in the region of the gall-bladder, nausea, vomiting and fever. After these symptoms had lasted three weeks, they gradually disappeared under treatment; during the next ten days she was much better, but then the symptoms recurred. The patient was about to be operated upon for gall-stones, but it was deferred on account of her low condition. She sunk at last into a comatose state and died. At the autopsy abscess of the pancreas was discovered instead of cholelithiasis. An excellent illustration of the value of crepitus as a sign was afforded by a case under my care at the Medico-Chirurgical Hospital:

CASE I.—Mrs. L. W., *aet* fifty-two years, white, occupation, housekeeper. The family history gave no clue to the affection from which she was suffering. The patient had had the ordinary diseases of childhood, also pneumonia at thirty-two, and diphtheria at forty years, of age. The latter affection was followed by nervous prostration. The complaint for which she was admitted to the hospital dated back five years. At first she manifested symptoms of indigestion. One week before date of admission (January 23, 1899) she was taken with severe pains in the right hypochondrium, which at times extended up to the right shoulder and around to the back; this was accompanied by nausea. The attack lasted for one day and then disappeared, but returned a couple of days later. These recurrences of colic, with brief intervals of freedom from pain, took place until date of admission, when her suffering was slight indeed. While under my immediate observation there was no jaundice, but the stools showed a visible, though moderate, lack of the normal bile. The liver was slightly enlarged and the gall-bladder was slightly distended. The urine analysis gave a negative result, there even being an absence of bile.

While the history and physical signs enumerated above aroused strong suspicion of cholelithiasis, the absence of jaundice and of the history of chill and febrile disturbance left room for a reasonable doubt as to the nature of the affection. I then examined carefully for the presence of gall-bladder calculi, and although it was impossible to bring them within the grasp of the fingers of the examining hand, deep palpation combined with a gentle lateral and up-and-down movement with the finger tips elicited a distinct, fine grating sensation (crepitus). This was strongly confirmatory, if not absolutely conclusive, evidence that the symptoms were due to the presence of "active" biliary calculi. The patient was now transferred to the surgical department and operated upon by Professor Laplace on January 28th, who removed over 150 stones from the gall-bladder. At the operation slight evidence of cholecystitis was observed, and afterwards the patient made a complete recovery.

Another instance of non-typical cholelithiasis in which the diagnosis rested principally upon gall-stone crepitus may be related:

CASE II.—S. W., *aet* fifty-four years, married, of good social position, consulted me in November, 1897. The family history pointed to gout and rheumatism on the mother's side. Patient had had some of the diseases of childhood and malaria during young adult life. A few years later mild rheumatic symptoms appeared. Two years prior to coming under my observation, the patient began to suffer from symptoms of indigestion and irregular action of the bowels. Pain developed and was present from time to time; its seat was in the lower epigastric region, and only occasionally in the right hypochondrium. There was no history of previous jaundice, but of the loss of twenty pounds in weight.

At the time of my first examination pain was, and had been for a few weeks, more pronounced, but its principal seat was still in the epigastrium, and no tendency to radiation to the right shoulder was shown; the feces were normal in color and the urine contained no bile. The temperature was normal, but the skin showed numerous circumscribed spots of pigmentation, particularly on the face and legs below the knees. On palpating the abdomen considerable tenderness was found over the epigastrium and in the region of the gall-bladder. The latter was somewhat distended and the liver slightly enlarged. On deep palpation during inspiration, I felt crepitus, which at once cleared the diagnosis to a considerable extent.

February 14th I was called to see Mrs. M., who had gone to visit a daughter residing fifty miles from Philadelphia. The patient had had a severe attack of pain on the previous day, and I found her slightly jaundiced; the dejecta were a pale drab color, and the urine contained bile pigment. The attack answered to typical hepatic colic from its description by the patient. A repetition of attacks followed for a period of two weeks, with increasing intensity of the jaundice after each seizure, and two dozen gall-stones were recovered from the feces, varying from a pea to a cherry in size. The jaundice and all other symptoms then speedily disappeared; strength and flesh were also regained with surprising rapidity. Treatment embraced nothing unusual.

CASE III., which presented other phases of interest, may be briefly narrated. M. D., *aet* sixty years, female, English nativity, occupation shop-keeper, first came under my care November 10, 1897. In health the patient had shown a tendency to obesity—height, five feet four inches, weight, 180 pounds. Family history disclosed gout in the mother and rheumatism in the father, and nothing more; previous personal history negative until the onset of the illness for which she consulted me. The first symptoms appeared August, 1896; they were apparently the symptoms of an attack of indigestion, and jaundice was absent. Similar attacks recurred during the next two months, at intervals of several days, and then jaundice supervened

for the first time. After the icterus appeared, slight pain was constant and paroxysms of colicky pains were experienced at times, but they were not severe; neither were they followed by a deepening of the ictteroid tint, according to the patient, though this statement may be reasonably doubted. It was obvious that there existed, most probably, an occlusion of the common duct.

Physical examination showed a downward enlargement of the liver of moderate extent, while the region of the gall-bladder was the site of a dense mass of a size equalling that of a hen's egg. The case had been diagnosed as carcinoma of the liver or its appendages, by several physicians who had previously studied it; but the long duration of the jaundice (a little more than a year), and the absence of a true cachexia and of symptoms indicative of gastric carcinoma, justified a reasonable doubt concerning the correctness of this diagnosis. I now carefully palpated the gall-bladder area, but the result was negative, the patient being rather stout and the abdominal walls unyielding, until I combined auscultation with palpation, when I detected a faint grating sound. It was now clear that the gall-bladder contained calculi, and that the occlusion of the common duct was probably due to the same cause. I am aware that cholelithiasis is a not uncommon cause of carcinoma of the bile passages in persons who are predisposed, and oppositely that rarely cholelithiasis may be secondary to carcinoma of those ducts.

Treatment by olive oil resulted in the removal from the biliary passages per rectum of large numbers of calculi. This was followed by a return to sound bodily health. The condition is, in my experience, quite common in subjects of obesity, and, as in this case, it precludes the possibility of recognizing the crepitus by the ordinary method—palpation. And although my experience with it has been limited, I would suggest the combined method (that used in the case reported above) in cases in which crepitus cannot be elicited by palpation nor a grating friction sound on auscultation.

Remarks.—The object of this paper is not to describe cholelithiasis, but merely to emphasize the value of gall-stone crepitus and friction as diagnostic symptoms of this affection. Obviously their presence, while corroborative, is not essential to an absolute diagnosis in instances of a typical character. On the other hand, irregular cases, by no means uncommon, often do not permit of a positive diagnosis. Here the presence of either crepitus or a grating sound on auscultation (in connection with a grouping of suspicious features) serves as a deciding factor in many instances. Of course we should also examine the stools for stones in all cases of cholelithiasis. It is true that this absolute proof of stones in the gall-bladder is sometimes wanting.² Again, in cases in which the gall-bladder is distended and tender,

² Courvoissier holds that when enlargement of the gall-bladder is present, the obstruction of the ducts is always due to some cause other than gall-stones—an extreme view.

with or without the presence of calculi in the viscus, there may be an utter absence of stones in the ducts, even in the presence of characteristic attacks of hepatic colic. Curious instances of this sort are to be found in the literature, but these merely constitute the rather frequent exceptions, and do not invalidate the general rule insisted on above, that when the gall-bladder, as often happens, is packed with stones, and a more or less characteristic clinical history of cholelithiasis is obtainable, gall-stone crepitus on palpation or friction on auscultation are most significant indications. I would here offer a few suggestions as to the best methods of eliciting both crepitus, and grating friction.

While examining for crepitus the patient should occupy a dorsal decubitus with legs flexed so as to relax the abdominal muscles (rectus abdominis), and then gentle but deep palpation over the gall-bladder area is to be made. If crepitus is not obtained in this manner; the finger-tips of the palpating fingers should be dipped into the abdominal wall just below the fundus of the gall-bladder and then drawn upward over the organ as though making an attempt to roll the fundus upward and forward. This failing, the patient should be told to inspire deeply, though slowly; this carries the gall-bladder downward and forward, and during its excursion, the examiner, while palpating, should make gentle counter pressure with the finger-tips. The tactile sense of the palpating fingers may be increased by pressing on their dorsal surfaces with the fingers of the disengaged hand so as to put the muscles of the examining hand at rest, as suggested by Pollatckek, and as has been recommended in palpating the appendix. When palpation fails, auscultation should be practiced. By this means we may distinguish a friction sound, and I am of the firm belief that the sense of hearing is more delicate and acute than that of touch. In one of the cases reported above, in which the gall-bladder was filled with calculi, combined auscultation and palpation (*auscultatory palpation*) led to the detection of a friction sound after other methods had failed. In attempting the latter mode of examination, the stethoscope should be placed just below the costal arch, so as to afford space for palpating over the fundus of the enlarged gall-bladder with the finger-pulps of the free right hand.

Lubricant for Genito-Urinary Instruments.

R Gum tragacanth,	gr. xlviii;
Ac. carbol. (95% solution),	m. i;
Glycerin,	℥iv;
Aquæ ad.,	℥iii.

Mix the latter three constituents, pour the resulting liquid upon the gum tragacanth in a mortar and let stand over night. The next day triturate with pestle till a homogeneous mass is formed. It can then be used from an ordinary ointment jar.

RUGGLES.

*ON THE RELATIVE FREQUENCY OF HERNIA IN THE SEXES
AND THE VARIOUS TYPES IN THE FEMALE;
A STATISTIC COMPARISON.¹*

BY THOS. H. MANLEY, M.D.,

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IN order to estimate the comparative frequency of hernial disease in the sexes, and different types in the same sex, we must turn to the statistics of those who have had the largest experience with it. These, however, are not as satisfactory nor as uniform as we might expect. Many are incomplete, and besides, in some important particulars, contradictory. It is important, however, if there be anything in prophylaxis, that we should be familiar with the various stages of life in the female in which hernia is most prone to appear, in order, if possible, that effective measures may be instituted to avert it.

In an examination of the statistics on this phase of the subject, we can scarcely resist the conclusion that at different epochs hernia presents itself under different aspects, that its evolution, its complications and accidents vary in different climates and races; and hence, at best, the most accurate statistics of any single observer on any number of cases possess only a relative value.

This at once becomes obvious, when we consult the most complete records of the best known authorities; wherein we may discover error and oversight from the different methods of securing estimates; as when one bases his conclusions chiefly on the examination, as, for instance, of recruits for the army, or when hernia of infancy or early childhood is chiefly considered.

Kingston says that for all ages the proportion of hernia is two males to one female. In this connection, it is interesting to note here how age leads up to a steady increase in the female. In the first year of life he examined 1,516 cases, of which but 107 were females. In the same year he examined 1,053 in adults between twenty-five and thirty years old, in whom he found 207 females. The proportion had tripled. Birkett reports 17,999 ruptures, in all ages, examined at the London Truss Society from 1887 to 1890, of which 3,000 were females. The same author further informs us that ruptures are 10 per cent. more common in the female from sixteen to fifty than in the male. Cloquet concluded, after a large experience, that ruptures are nearly three times more numerous in men than women. McCready, in 21,000 of all ages, found the proportion higher—5.9 males to one female. Berger, in a recent contribution, reports on the examination of 10,000 cases, but is rather reserved on this question of relative frequency.

¹ Extracts from an essay presented at the meetings of the Mississippi Valley Medical Association, Chicago, October 6, 1899.

However divergent the views of investigators may be, on this aspect of the question all must and do agree, that the comparative proportion undergoes radical variation in the sexes at different stages of life.

As a general rule, it may be stated that hernia is by all odds more frequent at birth and in early childhood in the male. As puberty is approached, the female ratio gradually ascends, and the male descends. Now, the greater part of boys' ruptures have disappeared; quite generally all the umbilical and most of the inguinal. Of femoral, as a rule, he has none till later; yet, in the next stretch of time—say from twenty to forty-five years, especially in the married state—the relative gain of the female continues to rapidly ascend. After this age, hernia continues to appear in about the same frequency in both sexes, with a greater tendency to strangulation in the female.

In our time, when operations for the cure of reducible hernia can so often be adopted, it may be noted in the published reports that but few female infants are included; and nowhere shall we see such a thing recorded as a kelotomy or radical operation for femoral hernia in the young child.

The striking contrast in the evolution of hernia in the sexes is, that while the majority in the male are congenital, or discovered soon after birth, in the female visible or tangible evidence of it is uncommon until after the fifth year, except in navel yielding.

In infancy, the female is subject to those inguinal protrusions which may include the ovary, the tube, or uterus. After the fifth year, the femoral appears, which during the child-bearing period is about equal to the inguinal, and after the menopause is considerably in excess. (McCready.) Heath places the proportion of inguinal to femoral in females as about equal. This will, however, only apply to the adult.

Birkett makes a similar indefinite statement when he says that "femoral herniæ are three times more frequent in the female than the male," because, in early life, in both sexes, femoral hernia is exceedingly rare.

Swasy, at the Hospital for the Ruptured and Crippled in New York, in the examination of 500 herniated children under five years of age, was unable to find more than two cases of the femoral type. This, too, is widely at variance with the statement of a distinguished writer who places the proportion of femoral hernia to all others as one tenth. (Thomas Bryant.) No doubt the author had the adult infirmity in mind; although, in order to be accurate, precision in detail is necessary. Kingston, in 1,582 cases of hernia, female, inguinal and femoral, of all ages, found 821 femoral and 761 inguinal, and stated that we seldom meet with femoral hernia in the female before menstruation. In the London Truss Society, in 9,296 cases of hernia examined there by him, during a period of six years, there were but six children under ten years old suffering from femoral hernia. In my own experience with the various ruptures of infancy and childhood, no case of

femoral hernia in either sex under six years of age has ever come under my notice. But all this is changed in the adult, for now, in groin ruptures of young women, femoral is the type we most frequently search for, and invariably in her who has borne children.

Under this head Swasy notes that in 321 herniated women examined, never married, there were 169 femoral and 152 inguinal; but he adds: "Pregnancy had a decided influence in changing the proportions; for of 951 mothers ruptured 575 had femoral hernia."

This would certainly imply that the ultimate development of femoral hernia in the female is sometimes closely related to, or dependent upon, maternity; probably, however, only as a determining factor. It is very doubtful if pregnancy or the parturient state, in relation thereto, can ever be regarded as anything more than a possible aggravating influence, and not as an initial cause.

Umbilical hernia presents itself with greatest frequency at two widely separated epochs of life. The infantile type has little anatomic or pathologic resemblance to the adult, except in its relative position.

Typical adult exomphalos is *par excellence* an infirmity of married women. It is sometimes encountered in men, but never with the distinctive anatomic features of the female variety. Although it appears that many diminutive reducible hernia are cured by pregnancy, this one is reproduced or aggravated by it, and is, furthermore, again very seriously compromised by the throes of labor. It has not been long since surgery could offer no succor to the unfortunate mother afflicted with this infirmity. But what can we accomplish now? Very much, and very little.

As to its comparative frequency, Boyer set it down as seven times more frequent in women than in men. Malgaignus placed the proportion much higher, viz., 18 to 1. Scarpa justly observed that the salient complicating features of exomphalos were never seen in the adult male. In 71 cases Sommering found 54 in women. In 344 cases seen in the London Truss Society there were 315 women. Berger observed it in the female, from twelve years up, and in 2,229 cases of hernia of all kinds found 496 umbilical. In 2,530 herniae in women over thirty years old, he found 693 umbilical. McCready gives the proportion in the sexes as 1.14 per cent. in male hernia, and 15 per cent. in female. Faus has noted that while groin ruptures are comparatively more infrequent in the negro female, exomphalos is much more common than in the Caucasian. In Berger's valuable statistical monograph it is curious and important to note the difference and extent of complications in the exomphalos of the sexes. Thus in 154 males, who suffered from this infirmity, there were but 15 who did not simultaneously have other types of hernia also in other regions. In 12 there was single inguinal, and 95 times double inguinal; while in 498 females, from fifteen years up, in 438 it appeared uncomplicated.

Inguinal hernia of the young adult female becomes relatively rarer than in early life. Its general features are similar to those found in the male; but we discover in her more erratic types, as those appearing through cloacae in the aponeurosis or the conjoined tendon in close proximity to the outer ring. But the essential difference in many is in the contents of the serous envelope, the tendency of its omental elements to undergo cystic degeneration, and the absence of those mammoth protrusions here witnessed in the male scrotal.

In consequence of no highly organized structure passing through the inguinal canal of the female, no type of hernia can be so securely trussed, and none tends more to disappear through the employment of judicious prothetic appliances. Should these fail, surgery quite invariably may be depended on to secure a permanent cure.

COMPARATIVE FREQUENCY OF STRANGULATION IN FEMORAL HERNIA; ITS
OBSURE SYMPTOMATOLOGY, SUDDEN ADVENT, COMPLICATIONS,
GRAVITY AND MORTALITY IN THE FEMALE.

The frequency of strangulation in femoral hernia in women is greater than any other. Many times our patients give us a history to the effect that the first knowledge they had of its presence was when they were seized with the grave symptoms following acute constriction. Not always suspecting the serious character of their trouble, they often resort to temporizing expedients before seeking surgical aid. These herniae sometimes seem to appear on the most trifling provocation, with little or no effort at all, certainly no violence, as was illustrated in a patient of my own, a woman of fifty years, who, while in her garden, stooped down to pick up a rake, when she felt something give in her right groin, and violent colic set in.

This type of strangulated hernia is less amenable to taxis than inguinal, and hence a larger number imperatively require surgical aid. At Guy's Hospital, Bryant, in 142 cases, was enabled to return the protrusion in only 38 by taxis—27.66. In consequence of their great depth, beneath a thick layer of fat, under, or contiguous with, intumescent glands, a small extrusion or an incomplete femoral may escape detection.

Pott and Cooper noticed that when those of diminutive size became strangulated, gangrene and grave constitutional disturbances often promptly followed. Bryant, in 34 cases of gangrenous hernia, had 24 femoral. Holmes regards the femoral as the most unmanageable of all ruptures to truss-pressure; and Birkett declares that "the mortality after operations for femoral hernia is the greatest of all, especially when the strangulation occurs early." Berger points out that this hernia, when strangulated, is attended with redoubtable symptoms. He also notes that strangulation in this type is four times more frequent than in inguinal. He places the accidents following operation for strangulation in the female at 40.50 per cent., and

in the male at 20.7 per cent., adding that "if hernia is infinitely more frequent in the male, it is altogether more serious in the female."

McCready gives the ratio of strangulation as 7 per cent. in the male and 16 per cent. in the female. In consequence of the position of the fullness of a crural rupture, the manner in which it is sometimes bound down by the fascia lata, which it does not clear, and its contiguity with the absorbents which lie along its path, it may assume a flattened or irregular outline, become inflamed and take on many of the surface features of a bubo or an abscess. Sir Jas. G. Simpson has reported a case in which, under a mistaken diagnosis, a femoral hernia was laid open by the bistoury. A case came under my own notice, some years ago, wherein the medical attendant poulticed the mass until the skin broke and the gangrenous intestine discharged its contents through the opening. Another case came under my observation later, to which I was called to perform a laparotomy for suspected "internal obstruction," which proved, on careful examination, to be one of strangulated femoral hernia, the extrusion being largely concealed under a mass of tumefied lymphatics.

Mr. T. H. Southam, in 85 operations for strangulation, had 37 cases of femoral hernia, 35 being in the female—9 between twenty and forty years, 17 between forty and sixty, and 11 between sixty and eighty. In the femoral, the mortality was 40.5; in the inguinal, 38.8, and in the umbilical, 75.0. There were 12 cases of umbilical, all in females between thirty and seventy years.

EXOMPHALOS, INCARCERATED AND STRANGULATED; RELATIVE FREQUENCY AND MORTALITY.

Adult exomphalos in the female presents several peculiarly unique features. (1) As to its etiology; in its aggravated form always dependent on the pregnant state or the violence of labor. (2) Its tendency to progressive increase in volume, its pathologic complications and gravity. (3) Its quite general incomplete irreducibility. (4) Its tendency to strangulation, though very slight. (5) Spontaneous or prothetic cure of it very rare.

Of this infirmity, Sir Astly Cooper observed that "pregnancy was the most common cause; and if it existed previously it was quite certain to be aggravated by it, though maternity did not lead to strangulation." Agnew said that in every hundred operations for strangulation, six or seven will be umbilical. This ratio is very far in excess of that given by many other authors. Recently, Tschering, of Copenhagen, and Hogethow, of Madgeburg, in an exhaustive review of the subject, gave the proportion of exomphalos as compared with other herniae as 5.46 per cent. in males, and in females 27.34 per cent. As to sex, Berger places the proportion as one umbilical hernia in men for seven in women. Boyer has affirmed that when

this hernia is strangulated the symptoms are more urgent and it is more quickly fatal than any other.

The mortality attending operative intervention for it has very widely varied in the service of different surgeons. Thus, Chavasse reports four operations performed in twenty-seven years in the Birmingham hospital, with but one recovery; while W. J. H. Stewart was able to collect 34 cases, reported in the *British Medical Journal* and *The Lancet*, for the ten years preceding 1888, all operated on for strangulation, with a mortality of but 7 per cent. Another author records 44 kelotomies for umbilical strangulation in 37 females and 7 males; mortality, 53.6 per cent. The wide discrepancy in the reported results of operative surgery in this type of hernia no doubt arises in consequence of the difference in the interpretation of symptoms and designation of condition; for the probabilities are that many included in Stewart's collection were but aggravated cases of incarceration. Positive strangulation in exomphalos, as compared with femoral or inguinal hernia, is very rare indeed.

In a considerable number of cases of strangulation which have come under my own observation—certainly more than one hundred—I have met with but two of strangulated exomphalos. Both cases were in old women—over sixty—one, the wife of a physician, moribund when I saw her, the hernia undiscovered until that time; the other case I operated on successfully, although strangulation was not complete. The latter was Dr. John Plunkett's patient, of this city.

RELATIVE MORTALITY AFTER OPERATION FOR STRANGULATED OR INCARCERATED UMBILICAL HERNIA.

Scattered through the medical literature of the decade—from 1886 to 1897—there are recorded 89 operations for strangulated, inflamed or incarcerated exomphalos. Of these there were 83 in females, the youngest thirty and the oldest ninety-two years old. In 3 the age is not stated. In the 89 of both sexes there were 27 deaths—30.3 per cent. In the 83 female cases, 26 deaths—31.3 per cent. In the six male cases there was one death—16.6 per cent. The average age at time of operation was forty-nine years and nine months—about twelve years later than in the femoral. The youngest were two males; one four months old, the other seventeen years. Average age of mortal cases, fifty-seven years and ten months—all females, except one, a man of seventy.

From the foregoing, it is evident that grave types of exomphalos are not unusual in the female, though very rare in the male. In more than half of the cases, the reporters omitted any reference to the physiologic state, or what influence parturition or pregnancy played as an etiologic factor. In 41 cases in which details as to previous state are included, in 37 the women had borne children.

TALKS TO GENERAL PRACTITIONERS.

OBSTRUCTIVE DISEASES OF THE MALE URETHRA.

BY J. D. THOMAS, M.D.,

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OBSTRUCTIVE diseases of the urethra may be acute or chronic, and are the *bête noir* of the inexperienced. They may cause either complete or partial retention of urine or labored urination. Again, neither of these conditions may obtain, but instead frequent and painful micturition occurs, the bladder being obliged to overfunctionate, and as a sequence the bladder passes from a condition of irritability to that of infective inflammation—cystitis.

"The age of a patient is frequently a guide to the cause of retention of urine in the male," as so clearly set forth in the September number of the *INTERNATIONAL MEDICAL MAGAZINE* by Prof. O. Horwitz. This affords a good working rule, but as we may find any of the obstructive diseases, with the exception of chronic hypertrophy of the prostate and congenital atresia, in all ages, it is well always to be on our guard.

I wish to emphasize in the beginning that in all of the acute *complete* obstructive diseases the first and foremost aim is to save the bladder. If the obstruction cannot promptly be removed, nor the bladder emptied by the urethra, the viscus should be protected from damage by overdistention by suprapubic aspiration, and this should be repeated when necessary until proper means, surgical or otherwise, can be instituted.

The various obstructive diseases, with very few exceptions, all require different lines of treatment, and the line of treatment to be followed will be governed by the cause.

The obstructive diseases (and obstructions) of the urethra are: Foreign bodies; acute prostatitis; false passage; rupture; stricture; spasm of the cut-off muscles; injury to, or in the neighborhood of, the anus; chronic hypertrophy of the prostate; small meatus; phimosis; pediculated tumors; congenital atresia.

The foreign bodies we usually meet with are calculi, pieces of catheter, gum tubing and gum bands; although any foreign body that can be introduced into the urethra may be met with. With the exception of calculi and broken catheters these foreign bodies find their way into the urethra from erotic motives. Calculi are caught either in the prostatic portion, the

pendulous portion or at the meatus. When caught in the prostatic portion they should be pushed back into the bladder and then crushed with a lithotrite; being small, the debris will readily be washed out with urination. When in the pendulous urethra, efforts may be made to remove them with narrow, long-bladed forceps. If the calculi are soft, they may be crushed *in situ*, but if hard the forceps are likely to slip. I removed one such calculus by working behind it a loop of silver wire. It is not judicious to make too prolonged efforts by these means, for the urethra will be seriously damaged. Failing with the above efforts, an attempt may be made to push the calculus back into the perineum, when it can be removed by perineal urethrotomy. Here, again, force must not be used in the efforts to push it back for fear of tearing the mucous membrane. Rather than use violence in any of the above proceedings, it is safer to cut down upon the calculus *in situ*, and thus remove it. Many authorities say that if it is removed through the pendulous urethra there is danger of a fistula remaining. In my experience, these wounds heal promptly. If the urine is healthy, it will do no harm, and it is unnecessary to tie in a catheter—it is a source of irritation. All that is necessary is to keep the organ clean. In the case of a boy from whom I removed the calculus through an incision in front of the scrotum, the wound healed in a week. When the calculus is caught within the meatus it may be scooped out with the spoon on the end of a grooved director or the meatus may be incised.

Pieces of catheter or gum tubing can usually be removed with some form of forceps, unless too deeply situated. The following case is interesting: O. J., aged twenty-six years, colored, passed a gum band, four inches long by five-sevenths of an inch broad, into his urethra, for its pleasurable effect, and went to sleep with the extremity projecting from the meatus. When he awoke the band had disappeared within. He tried to work it forward by pushing along the under surface of the penis, but failed. For two weeks he was obliged to remain in the house on account of difficulty in walking. From this time on he followed his occupation, that of a teamster—driving four horses, he riding the saddle horse. After the band had remained in the urethra two or three weeks, a slight discharge appeared, which continued up to the time of operation, and in the meantime he was not annoyed with frequent urination and was not obliged to get up at night. The only trouble he experienced was a burning after urinating. Erections caused no pain. The band was in the urethra just one year. On introducing the searcher a calcareous object was struck in the perineal urethra. After cutting down upon it I found it curled up in the bulbous urethra and covered with calcareous deposits. One extremity extended through the membranous and into the prostatic urethra. After removal of the foreign body, examination showed the bladder free from stone. The patient made a good recovery.

A good deal of speculation has been indulged in as to why foreign bodies travel backward toward the bladder. *They do so by aspiration. With each inspiration they are gradually sucked in.*

Acute prostatitis is usually due to a gonorrhea. It is sometimes due to exposure (when the prostate is not healthy) and to injury from instrumentation. To treat this disease efficiently the patient should be placed upon his back, the rectum kept empty, enough morphia given to insure moderate comfort and alkalies administered in sufficient amount to keep the urine *neutral*. When the disease is due to gonorrhea, and improvement does not take place in a reasonable time, say ten days, there is nothing that will give such good results as instillations into the deep urethra and neck of the bladder, with a Keyes' syringe, of nitrate of silver in strong solution, ten to thirty grains to the ounce. This may be repeated as soon as the good effects of the previous injection begin to wane. With proper treatment it is seldom that suppuration takes place, and when it does occur the abscess usually ruptures into the urethra. When acute retention of urine occurs in these cases it is not good practice to wait too long in the hope that the bladder will empty itself by the natural method, but the bladder should be relieved by the introduction of a soft rubber catheter. A repetition of this occurrence may be avoided by hot hip baths or by the application of leeches to the perineum, if there are no contraindications.

False passage is due to violent (I feel like calling it vicious) instrumentation, and occurs, as a rule, in front of the triangular ligament in the bulbous urethra. Nine times out of ten, in the healthy urethra an instrument is retarded, detained at this point from spasm of the cut-off muscles (compressor and deep perineal). By a little delay at this time, on the part of the operator, the spasm subsides, and if the catheter is properly directed it slides through the membranous and prostatic urethra into the bladder. Many times this spasm is mistaken for a stricture, and, for a want of proper knowledge and lack of the *tactus eruditus*, the instrument tears the mucous membrane and a very serious traumatism is committed. In case there is an actual obstruction at this point in the form of a stricture, the same results are frequently seen. An instrument should always follow the urethra. If it is impeded it is being improperly introduced or meets with an obstruction, and under either condition force is malpractice. If an obstruction is met with, the character of the obstruction must first be determined before further proceedings are instituted. If from the history of the case a stricture is suspected, bulbs in gradually decreasing sizes should be passed until one corresponding with the caliber of the stricture is reached. In cases where a false passage has been made, and the patient is still able to empty his bladder, and infiltration is not taking place, the proper treatment is "hands off" until nature has closed the rent, for further attempts only make the rents worse. After healing has taken place, then an explora-

tion may be made, and the condition found would determine the line of treatment to be followed. Where there is a rupture, and retention or infiltration of urine takes place, radical measures must be resorted to. I can better indicate the line of treatment to be followed in most of these cases by reporting a case that came into the hospital while penning this "talk." The patient, a middle-aged man, was sent in, from an adjoining county, during the night. The resident called me up by telephone, stating that the bladder extended above the umbilicus and that the patient had bled a great deal from the urethra, and was still bleeding some from the previous attempts at catheterization. I instructed him to try and pass a soft rubber catheter; failing in this, to leave the urethra alone and aspirate the bladder above the pubis. On calling at the hospital the next morning, I was informed that a soft instrument would not pass, and that its gentle introduction was followed by free bleeding, when the bladder was relieved by aspiration. On examining the patient, I found the bladder again filled with urine. On interrogating the urethra, I found it to be a capacious one, admitting a No. 34 F. bulb down to the bulbous urethra. I then gradually reduced the bulbs to No. 14 F., which number fortunately passed into the bladder. This was removed, and, after some coaxing, a flexible No. 12 F. olivary catheter was passed into the bladder. This was tied in, with the intention of allowing it to remain for a few days, expecting then that the patient would urinate voluntarily. During the manipulation with the bulbs and catheter, more than one rent was recognized, and, with the utmost gentleness, there was a good deal of bleeding. On my visit the following morning, I found that the catheter had been forced out during the night, and that the bladder was again distended. He was now taken into the operating room, where the attempt to reintroduce the catheter proved a failure. The patient was anesthetized, a Wheelehouse's hooked staff was passed to the point of obstruction, and an incision made upon the point of it. After splitting the deep layer of superficial fascia, instead of the bulbo-cavernous muscle showing up red and healthy, it was discolored in spots with black blood, and in cutting through it there was free bleeding, a circumstance that does not usually occur, and along the margin of the blood stream a narrow line of pus was observed, indicating that a small abscess had already formed. After completing the incision, and turning the knob of the staff outward, the urethra could not be recognized. The wound was then spread by passing a ligature through each of its sides and traction made upon them. The parts were so lacerated, however, that I was obliged to find the continuity of the urethra by dissection (requiring about ten minutes); this being accomplished, a grooved director was introduced, which served the purpose for making a free incision. A No. 36 F. sound was now introduced through the entire urethra into the bladder with ease. As the bleeding following the operation was rather free, it was necessary to pass a large tube through

the wound into the bladder and surround this with gauze. I do not consider it good surgery to waste too much time hunting for the urethra in the perineum. Rather than make mince-meat of the tissues it is more precise and expeditious to do a suprapubic cystotomy and practice retrocatheterization, when, with a sound also in the anterior urethra, both ends of the lacerated or torn urethra are under the eye.

Rupture of the urethra, either from fracture of the pelvic bones or direct injury to the perineum, should be treated along the same lines as indicated in the above case. When urinary infiltration has taken place, free incisions should be promptly made.

THE IMPORTANCE OF THE EARLY RECOGNITION OF CARCINOMA UTERI, AND THE METHODS BY WHICH IT IS ATTAINED.

BY E. E. MONTGOMERY, M.D.,

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CANCER of the uterus is a most insidious disease in its onset, and when once the pelvic tissues are extensively involved, the individual is doomed. In its very early stages the disease is very amenable to treatment. In the early history of medicine, cancer was considered a blood disease, and it was commonly accepted that its advent indicated a fatal termination, but more careful investigation revealed that it was local in origin, and judicious and early removal was followed by cure.

The appreciation of the possibility of cure and the serious result when neglected illustrate the importance of its early recognition. The disease may occur at any age. It is generally regarded as a disease of the climacteric, and it is not to be disputed that the majority of cases occur between the ages of forty and fifty, but it is found as early as the twentieth year, and at no subsequent age does the patient become immune. Observation demonstrates that the younger the patient, the more rapid the progress of the disease. The processes of metabolism are more rapid in the earlier years and the greater susceptibility of the individual to the ravages of the disease renders her tissues less resistant to its progress.

Many attempts have been made to discover a parasitic origin for the disorder, but the careful investigation of its course, and patient study in the bacteriologic laboratory, fail to render such a theory tenable. All that we can safely assert is, that injuries to the tissues and subsequent continued irritation are sometimes followed by the development of carcinoma; that trauma and irritation do not always produce the disorder; it is dependent upon the varying susceptibility of different individuals to its development;

or, in other words, to heredity. The influence of trauma and irritation as factors in the production of the disease is rendered prominent by the greater frequency of cancer of the cervix in the multiparous woman and disease of the body in the nulliparous.

The disease has no characteristic symptoms. It is true the diagnosis is frequently based upon hemorrhage, offensive discharge, and pain, as a tripod which should render it recognizable; but a careful analysis of these symptoms indicates that no one, nor even all of them, are confined to cancer of the uterus. In a previous talk we have indicated that hemorrhage may prove a symptom of a great variety of diseases which are in no sense related to malignancy. Any cause which leads to caries of the tissues or putrid decomposition will produce an offensive discharge. Pain is a symptom of many pelvic disorders.

The occurrence of these symptoms grouped together should direct the attention of the conscientious physician to the importance of a painstaking investigation. The disease may involve either the cervix or body. When the vaginal portion is involved it is recognizable as either a proliferating exuberant growth which may have originated in the pavement epithelium, or in the columnar epithelium of the cervical canal. Not infrequently the proliferated masses of epithelium at once break down, causing an excavation which may involve the greater part of the cervical wall, leaving a mere shell.

The route of further invasion depends somewhat upon the original site. The disease originating in one kind of epithelium shows a disinclination to invade the realm of another, consequently the entire cervical wall may be excavated without the disease presenting any sign of break upon the vaginal surface. Again the squamous epithelium forms an extensive mass of disease involving the vagina without invasion of the cervical canal. In cases of lacerated cervix, it is not infrequently found that there is a mixed form of disease in which both varieties of structure are involved and the invasion is more marked.

At no period of life should the serious import of uterine hemorrhage be ignored, but a careful investigation as to its cause should be instituted. Infiltration of the cervix is recognized by localized hardness, which is more distinct and defined than that which is produced by inflammation.

Involvement of the vaginal portion of the cervix is discernible by the fragile, fissured condition of the exuberant growth. Excavated portions show an irregular, crater-like edge, with friable tissue and more or less indurated margins.

Continuous bleeding and discharge from a cervix which presents a normal external appearance should indicate dilatation for digital exploration. Such an investigation would disclose loss of structure, indurated areas, and masses of infiltration.

If the means recommended fail to show certain inflammation, portions

of tissue should be secured for microscopic examination, either by excision of a suspected part, or, where it is not accessible, the scrapings by the curet should be submitted. These means will frequently afford information of the early stage of development, which cannot be distinguished by other means.

The gravity of the disease when neglected, its durability when attacked early, should be sufficient excuse for resort to such measures.

THE DIAGNOSIS OF IRITIS.

BY WALTER L. PYLE, M.D.,

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It is especially important to distinguish iritis from conjunctivitis and from acute glaucoma. If the case is mistaken for one of simple acute conjunctivitis and the ordinary astringents and feeble caustics are used, the iritic inflammation is only further irritated, and the disease is left free to progress to the formation of dangerous synechiæ. It is still more important to distinguish iritis from acute glaucoma, for should atropin, the remedy *par excellence* for iritis, be used in a case of glaucoma, the vision of the affected eye may be speedily destroyed; or, on the other hand, should eserin or pilocarpin, miotics indicated in glaucoma, be used in a case of iritis, the results may be equally disastrous.

The pain is generally the symptom that drives the patient to seek a physician's aid. In iritis it is generally very severe, and is located not only in the eyeball but radiates in the manner of supraorbital neuralgia. It is paroxysmal, and is worse at night. If there is any ciliary involvement the globe is exquisitely tender to the least pressure. These same symptoms may mark the onset of an attack of acute glaucoma. In conjunctivitis the pain is more superficial and of a smarting or burning nature, with the sensation of a foreign body beneath the lids. However, some forms of iritis proceed without severe pain.

Photophobia in a varying degree is present in iritis, although not the conspicuous sign it is in keratitis and retinitis. Unless the cornea is affected there is no marked photophobia in conjunctivitis, and in glaucoma photophobia is usually inconsiderable.

Vision is generally dimmed in iritis, but not suddenly. In acute glaucoma there is sudden and almost complete failure of vision at the onset of the attack. In uncomplicated conjunctivitis, particles of mucus may obscure the cornea momentarily, but ordinarily vision is but little affected.

If the eye is cleansed by boric acid irrigations and the mucus removed, vision is found normal.

The iris is discolored in iritis. Gray and blue irides become greenish and brown irides take on a more reddish hue. The whole iris appears thickened and the surface loses its luster and definition. On close inspection, the vessels on the surface are seen to be greatly engorged and tortuous. The exudation may also be detected by oblique illumination. In glaucoma the iris is discolored, but appears atrophic rather than thickened. However, associate haziness of the cornea may obscure a clear view of the iris, and so deceive a novice. In conjunctivitis there is no discoloration or loss of luster of the iris.

The pupil is commonly contracted in iritis, and is sluggish or fixed and irregular rather than round. Often the presence of projecting tags of pigment may indicate synechial attachments. Synechiae may occur even when the pupil is dilated. In such cases, when there is an attempt at contraction there will be seen re-entrant angles of attachment to the lens capsule. The pupil instead of appearing pure black may seem grayish or really opaque from organized exudation. In glaucoma the pupil is dilated, sluggish, and greenish in color. The pupil is unaffected in conjunctivitis. If there is speedy and complete dilatation of the pupil after the instillation of a mydriatic, iritis may be excluded. This test, of course, must be avoided if there is a suspicion of glaucoma.

The injection in iritis is reddish and most marked near the cornea, with a bright zone of ciliary redness. The vessels run deeply and straight toward the cornea, and are not movable with the conjunctiva. In acute glaucoma the same conditions may obtain. In conjunctivitis the injected vessels are superficial, tortuous, irregular in distribution and freely movable. The injection is red, but less marked near the cornea. However, in a severe attack of iritis, there may be an associate conjunctivitis to confuse the diagnosis, and in a violent conjunctivitis there may be ciliary congestion.

The secretion in iritis and acute glaucoma is chiefly lacrimal, while in conjunctivitis there is an abundance of mucus, seen in flakes and matting the lashes together. The conjunctiva is also much thickened, and the vessels on the everted lid are concealed in the general redness.

The cornea is generally clear in iritis, although there may be deposits on Descemet's membrane. It is of normal sensitiveness. In simple conjunctivitis the cornea is unaffected. In glaucoma it is steamy, and the sensibility is greatly diminished.

The anterior chamber is of normal depth, but may be filled with exudation in iritis. In acute glaucoma, the anterior chamber is very shallow, the iris being pushed against the cornea. In conjunctivitis the anterior chamber is unaffected.

The tension is generally normal in iritis; but in the early stages of the

serous form tension is much raised, and the pupil may be dilated; in the later stages of serous iritis, tension may be diminished. In acute glaucoma marked rise of tension is a characteristic symptom. In conjunctivitis, tension is unaltered.

Summary. From what has been said, it is clear that there should be no difficulty in differentiating iritis from conjunctivitis. The chief distinguishing points are: Discoloration of the iris when compared with its fellow; contracted, sluggish or fixed pupil, turbidity of the aqueous and ciliary injection. From acute glaucoma, the diagnosis is more difficult. Here, besides testing for increase of tension, we have the size of the pupil as a guide in iritis, more contracted than usual and perhaps fixed; in glaucoma, dilated and sluggish. Ordinarily, on account of the turbidity of the media in these acute inflammations, satisfactory ophthalmoscopic examination is impossible, and the condition of the optic disc cannot be determined.

LABORATORY METHODS OF DIAGNOSING TUBERCULOSIS. THE STAINING OF SPUTUM.

BY W. WAYNE BABCOCK, M.D.,

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THE burden of exactness in the diagnosis of tuberculosis is resting more and more upon bacteriologic methods. The frequency of indefiniteness of the clinical symptoms, in this disease, will be readily conceded, and even its most distinctive structural lesion, the tubercle, is simulated in a number of other morbid processes. No special argument is needed, therefore, to emphasize the importance of confirming or disproving suggestive clinical or pathologic alterations by ascertaining if the tubercle bacillus be associated. In the present talk I shall describe in detail certain practical methods of demonstrating this bacillus that have proved their value in the diagnosis of tuberculous affections. Even if you should be entirely inexperienced in bacteriologic technique, the procedures given are, for the most part, sufficiently simple to be readily mastered.

In the search for the tubercle bacillus, it is important to remember that we are not able to make a diagnosis from the shape or size of the bacillus alone. There are too many other bacilli closely resembling that of tuberculosis to permit one to form an opinion merely from peculiarities of contour. Much more distinctive are the peculiarities of staining shown by this organism. Thus, after being

stained, you will find that the bacillus has such a hold upon its dye that you may apply decolorizing agents sufficiently powerful to remove the color from nearly all other bacteria and cells, before this micro-organism loses its staining. No matter how closely a germ may otherwise resemble the tubercle bacillus, it is not to be considered if it does not show this characteristic staining reaction. Although the organism, when stained, does not readily release its color, it also resists the penetration of dyes, and is not colored by the ordinary staining methods used for many other bacteria. By selecting the most powerful of the anilin dyes, increasing their penetrating power by adding a proper mordant and using heat, the resistance to stains is overcome and the tubercle bacillus may be very rapidly colored. After this staining has been followed by decolorization to remove the stain from any associated bacteria, the latter may be recolored by one of the simple stains of a contrasting color without altering the first coloration of the tubercle bacilli present. These are general principles observed in staining this micro-organism, no matter what its source; but it is desirable to add certain modifications dependent upon the character of the material examined. The examination of sputum will be detailed at this time, and later certain other methods, important in the examination of other fluids of the body, will be indicated.

In selecting a specimen of sputum preference should be had for that which has accumulated in the bronchi during the night and is expectorated in the morning. You will, of course, instruct your patient to carefully reject any of the secretions of the naso-pharynx removed by hawking, and to preserve that sputum only which is removed by coughing. To avoid such contamination it is desirable that the patient rinse out the mouth and pharynx before "raising" the sputum. The specimen should be received into clean wide-mouth bottles or covered jars and protected from dirt and dust. No preservative should be added, nor is it essential that the specimen be fresh. The bacillus stains characteristically after remaining many weeks in putrid sputum. If the disease be well advanced a bit of the muco-purulent secretion selected indiscriminately will probably show a number of the bacilli. If this fails, pour the sputum upon a clean black surface, as a glass plate placed over black paper, and, aided by a good light, carefully pick over the sputum, selecting for staining any minute whitish or cheesy particles. The cheesy tuberculous particles may be simulated by particles of food or by the cheesy masses from the tonsillar crypts, so that they are not to be absolutely depended upon.

Having cleansed an unused microscopic slide with soap and water and polished it with a clean cloth, the small portion selected is transferred, by a clean wooden splinter or a wire, to the upper surface of one end of the slide and spread out in a thin, even layer. The other end of the slide is reserved as a handle during the manipulations. After the sputum has entirely dried,

either spontaneously or by the aid of gentle heat, it is to be *fixed* in order to coagulate the associated albuminous principles and to secure proper adhesion to the glass. For this purpose the smokeless alcohol or Bunsen flame is used. The slide being held film side up in the right hand, the surface of the glass under the film is first brought in contact with the flame and then quickly applied to the palm of the left hand. This little procedure is rapidly repeated until the heated part of the slide is felt by the palm to be *burning* hot, when the smear may be considered fixed and ready for staining. It is important not to burn or overheat the preparation, and by frequently testing the degree of heat as above directed this should not occur.

The stain is fuchsin, held in solution by alcohol and combined with carbolic acid as a mordant. The red solution formed, when held to the light, should be nearly opaque; but after several months the solution becomes more transparent, deposits a dark-colored precipitate, and should be discarded. It is conveniently kept in a small bottle with a pipette stopper. Its formula is:

Carbol Fuchsin—

Fuchsin,	1 part;
Absolute alcohol,	10 parts.
Dissolve and add 5 per cent. watery solution of phenol crystals,	90 parts.

In staining, quite a liberal quantity of the carbol fuchsin is poured over the smear, which is then held five or six inches above the flame. The stain is not permitted to boil, and is to be removed from time to time in order to see the faint vapor which indicates that the required temperature has been reached. More stain is added, as required, to keep the stain from drying upon the slide, and sufficient intermittent heating to cause the slight vaporization continued for about two minutes. Sufficient care should be taken to prevent the stain from dripping or from flowing to the other end of the slide and soiling the fingers. The excess of the stain is rinsed off in water and the dye then removed from the other bacteria by washing with:

Acid Alcohol—

Hydrochloric acid, C. P.,	3 parts;
70 per cent. alcohol,	97 parts.

As soon as the film becomes almost entirely free from the red color, it is rinsed in water and the following contrast stain poured upon it:

Loeffler's Alkaline Methylene Blue—

Saturated alcoholic solution of methylene blue,	30 parts;
1 to 10,000 watery solution of caustic potash,	70 parts.

This is permitted to act about one-half minute, if cold, or one-fourth minute, if warmed, after which the preparation is washed in water and then dried.

When thoroughly dry, you may apply a drop of cedar oil to the smear and examine at once, without a cover glass, under the oil immersion lens. If you have not an oil immersion lens, or if a permanent mount is desired, instead of cedar oil a drop of Canada balsam should be placed upon the stained film and a clean, thin (No. 1) cover glass superimposed. The entire process is more simple and requires less time than this rather lengthy description might suggest. Thus, after you acquire some expertness, the time required for the various steps may be about as follows: (1) Spreading and drying, $\frac{3}{4}$ minute; (2) fixing, $\frac{1}{4}$ minute; (3) staining, 2 minutes; (4) washing, $\frac{1}{6}$ minute; (5) decolorizing, $\frac{1}{4}$ minute; (6) washing, $\frac{1}{6}$ minute; (7) counter staining, $\frac{1}{2}$ minute; (8) washing, $\frac{1}{6}$ minute; (9) drying, $\frac{3}{4}$ minute. The entire process, therefore, may be completed by the expert within five minutes, but carefulness should never be sacrificed in the endeavor to save time.¹

In examining the tubercle bacillus high magnification and good illumination are essential. The organism measures about 2μ ($\frac{1}{12500}$ in.) in length, while its breadth is only about one-seventh as great. Nearly four tubercle bacilli of average size placed end to end would, therefore, be required to reach across a single red blood corpuscle. From this comparison, it will be evident that even with our greatest magnification these organisms are very small objects. While they may be seen by the aid of a $\frac{1}{5}$ inch objective of good defining power, especially when a substage condenser is also used, they appear as such extremely minute rods that a $\frac{1}{10}$ or $\frac{1}{12}$ inch oil immersion is an essential for the more careful work. The novice, in particular, will find it difficult to find the bacilli with objectives under $\frac{1}{10}$ inch. The light condenser should be so arranged so as to afford brilliant illumination, for it is upon the brightly lighted field that the deeply stained bacilli stand out most distinctly. In preparations stained as directed the tubercle bacillus shows the following characteristics: (a) It is a minute, rod-like body with rounded ends, and usually shows a slight curve. Its protoplasm often appears beaded or broken up into minute stained segments, and occasionally little knob-like projections, from the side of the organism, are seen. (b) It is stained a decided dark red color; other bacteria are blue, and are usually less intensely stained. (c) Although often seen singly, it is also seen in small groups of from two to six individuals. The bacilli frequently lie parallel or somewhat diagonally to one another, forming ||, X or V like figures. No bacillus should be considered that does not show the characteristic form and staining. Occasionally quite a prolonged search is necessary in order to find the tubercle bacilli. If not found at first, it is advisable to make repeated examinations of the same and other speci-

¹ As it is not essential, the counter staining may be omitted. It enables one, however, to see the associated bacteria, leucocytes and tissue cells, and produces a stained field which is helpful in focusing.

mens of the sputum. While it is the rule to find the organisms in the sputum of pulmonary tuberculosis, a failure to find them, of course, does not negative the disease. Upon the other hand, a diagnosis should not be made from the presence of but a single suggestive-looking organism, nor may one accurately judge the extent of the tuberculous process from the number of bacilli found.

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NEUROSAL CONDITIONS INVOLVING EXCESSIVE SECRETION
OF THE GASTRIC JUICE (HYPERCHLORHYDRIA,
HYPERCHYLIA, GASTROXYNSIS, REICH-
MANN'S DISEASE, ETC.).

BY BOARDMAN REED, M.D.,

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IN discussing chronic sthenic gastritis in the August and September numbers of the INTERNATIONAL, I touched incidentally upon simple hyperchlorhydria, a condition which is supposed to be neurosal merely. It is often impracticable for even an expert to diagnosticate between a case of marked hyperchlorhydria and incipient or mild acid gastritis, and the treatment of the two affections is the same precisely, except that lavage, which is probably indispensable in advanced cases of the inflammatory affection, is not necessary in the simple neurosis.

For the sake, however, of completeness in this series, and because gastroxynsis and Reichmann's disease, which have not been hitherto considered by me, are somewhat important, I have decided to devote a brief separate talk to this group of affections.

Keeping in mind the essentially practical character sought to be given to the instruction herein imparted, I shall avoid disputed questions and the citation of many authorities, even at the risk of being considered dogmatic; but anyone desirous of delving more deeply into these subjects will naturally obtain some one of the numerous complete treatises upon them now accessible even in English.

It is my own opinion, based upon a considerable experience, that there rarely occurs a long continuance of an excessive secretion of the gastric juice from whatever cause, without exciting some proliferation of the secretory glands.

Symptomatology.—Simple hyperchlorhydria presents the symptoms already described under "Chronic Sthenic Gastritis" in our August issue. If they have not lasted long, it may be inferred that they result probably from

a merely functional derangement. If they have existed either persistently or intermittently for years, or even many months, there may well be a strong suspicion of cell proliferation, and it may then be expected that the disease will not yield easily or quickly.

You will see scores of cases in which hyperchlorhydria or an excessive secretion of HCl during digestion is a fairly constant condition, with or without acid gastric catarrh, for every case encountered of the other forms of hypersecretion above mentioned. In gastroxynsis, or gastrosuccorhea chronica periodica, which is admitted by most observers to be rare, there are sudden and severe attacks of nausea, vomiting and gastric pain, in which quantities of fluid mixed with mucus and sometimes bile are brought up, showing a large excess of hydrochloric acid, and accompanied usually by headache, which may be intense, and by depression or prostration. The attacks come on suddenly, most frequently in the night, and last one or several days. They recur at varying intervals, sometimes as often as once a week, though rarely so often, and sometimes they are a year or more apart. Between them the patient may enjoy apparent health, though often a considerable excess of hydrochloric acid will be found in the stomach during the digestive periods.

This disease affects especially brain workers and excitable persons, as do all the forms of hydrochloric excess, and seems due often to excessive or prolonged mental strain.

The continuous hypersecretion or Reichmann's disease, often called also gastrosuccorhea chronica continua, is exceedingly rare as a pure neurosis, most of the supposed cases probably being a result of an obstructed pylorus and gastric dilatation. The symptoms are those of hyperchlorhydria, except that they persist during the intervals between the digestive periods—that is, not only when there is food in the stomach, but also when there is not. Considerable fluid containing the elements of the gastric juice can be found in the stomach in the morning fasting and not mixed with remains of food, even when the stomach has been washed out thoroughly the preceding evening. There is also more likely to be gastric pain and vomiting than in simple hydrochloric acid excess. Marked nervousness, with usually constipation, and most commonly insomnia, are further symptoms of importance.

Differential Diagnosis of the Forms of Hypersecretion.—This must turn almost entirely upon the chemical and microscopic examinations of the stomach contents. When an abnormally high percentage of hydrochloric acid is present during digestion only and, besides an absence of any considerable amount of mucus of gastric origin, there is an absence also of cell elements coming from the gastric mucous membrane and showing proliferation, the case is one of hyperchlorhydria, probably without any gastric catarrh. When there are the same findings at all times of the day, in the morning fasting as well as at other times, and there is no dilatation

or other organic disease, the trouble is most likely to be Reichmann's disease. When the symptoms and signs of hydrochloric acid excess come on periodically and with violence, yielding to treatment in a day or in two or three days, and leaving the patient between times either well or with only a moderate hyperchlorhydria, the trouble may be set down as gastroxynsis.

The diagnosis from gastric ulcer is not always easy. Indeed, it is rarely possible to exclude ulcer positively in any case of painful indigestion, especially with an excessive or normal percentage of hydrochloric acid. But in most cases of ulcer there are markedly sensitive spots over the epigastric region—usually near the ensiform process—and very often at the left of the spine near the origin of the eleventh and twelfth ribs. Even moderate pressure upon these spots elicits decided pain. Then hemorrhage from the stomach, shown either by the vomiting of altered blood or passing the same with the stools (coffee-ground vomit or stools), occurs in at least four-fifths of all cases of ulcer, and not in the uncomplicated forms of supersecretion. The pain is more severe and longer lasting usually in ulcer, and is aggravated, never relieved, by food.

Let me guard you against one mistake, which is often made by good clinicians and by some even who consider themselves stomach specialists—that is, relying upon Congo red paper in testing for free HCl. Congo red is changed decidedly in color to a bluish tint by any kind of free acid, even by organic acids, especially if present in considerable amount, though the change is to a more pronounced blue in the presence of free hydrochloric acid. It is wholly unreliable except as an evidence that some form of free acid is in the stomach contents. There are other almost equally convenient tests for hydrochloric acid, which are always reliable—especially the phloroglucin-vanillin or Güentzburg test.

The *Prognosis* is rather better in all of these forms of hypersecretion than in those complicated with a catarrhal process. Still the severer cases are always rather stubborn and are very liable to relapse.

Treatment.—I can add very little to the measures previously advised for the major affection. In gastroxynsis no food should be given the first day and after that feeding should be resumed very cautiously and tentatively with spoonful doses of milk and lime water or beef juice, white of egg and such predigested aliments as Somatose powder with milk or the Somatose biscuits, Bovinine (one or two teaspoonsful in a wineglassful of milk or water), and Eskay's Food with milk. After a day or two of small feedings with one or more of these every two hours, the diet may be gradually enlarged to that prescribed in a former talk for chronic sthenic gastritis, which is the same as that suitable for simple hyperchlorhydria, as well as for Reichmann's disease.

During an attack of gastroxynsis the patient should be kept in bed and a partial rest treatment (rarely complete and continuous rest, unless the pa-

tient be a hysterical woman) is often helpful during the first month or so of the management of other severe cases of hypersecretion. Rest on the back a part of every day, with massage, Swedish movements and electricity, is often very advantageous, but a complete rest from mental occupation and from sexual excitement is still more important. Changes of climate and gentle, never excessive, out-door exercise are exceedingly useful.

In simple hyperchlorhydria and in gastroxynsis lavage and intragastric electricity are not often necessary, but in Reichmann's disease they may both prove very useful—indeed more so than anything else.

The medicinal remedies advised for acid gastric catarrh act equally well usually in the nervous forms of excessive secretion. In gastroxynsis, of course, they are applicable especially during the intervals between the attacks. In Reichmann's disease, it is important to push the treatment somewhat energetically and atropin in fairly full doses often needs to be administered, but it should not be forgotten that when the remedy is carried to the point of drying the mouth, it is very desirable to give some active diastasic preparation with or near the meals—preferably the Taka Diastase. Nitrate of silver is another remedy which should be remembered, both for its tonic action on the central nervous system and for the gastric mucous membrane.

Alkalies and alkaline spring water, especially Carlsbad and Bedford, can be employed helpfully if carefully watched and stopped in time. Hyperacidity is not the same as hydrochloric acid excess. Before leaving this subject, I desire to impress upon you a few words of caution :

A relic of the old days, when all of us had to guess at the probable character of the contents of our patients' stomachs, is the ambiguous and very mischievous word hyperacidity. The term acid dyspepsia has also come down to us from the same hazy pre-scientific period. Some writers, unfortunately, still designate indigestion with hydrochloric acid excess as acid dyspepsia, and refer to hyperchlorhydria as hyperacidity. This is a vagueness which has caused much very bad therapeutics.

An excess of organic acids, such as lactic, acetic, butyric, etc., often produces a marked and painful acidity of the stomach contents with very injurious results to the intestinal digestion as well as to the intestinal mucous membrane and the nervous system. Even spasm of the pylorus and dilatation may probably be results of this form of acidity. Such a hyperacidity is caused by an exactly opposite condition to that found in hydrochloric acid excess—that is a condition of debility or more or less complete atrophy of the gastric glands which results in a deficiency or even total absence of secretion of the gastric juice. To treat this markedly asthenic condition by alkalies and other remedies designed to diminish the activity of the glandular structures of the stomach would naturally lead in the end to a disastrous aggravation of the disease and all its symptoms ; yet this is frequently done

by men who do not analyze the gastric contents of their patients, on the supposition that the vomiting or gulping up of intensely sour ingesta signifies hyperacidity or acid dyspepsia, and that these always demand an alkaline treatment.

In such cases, when the vomited ingesta are sour from an excess of organic acids with absence or a deficiency of hydrochloric acid and pepsin, an exactly contrary line of treatment is usually required—to wit, the administration of these deficient elements of the gastric juice as medicines together with roborant treatment generally.

Guaiacol Carbonate and Creasote Carbonate in Bronchitis and Pneumonia. The attention of the profession is again called to the use of guaiacol carbonate and creasote carbonate. Dr. Hülscher published an article in the *Berliner Klinische Wochenschrift* in 1891, Chanusier contributed to this knowledge in *The Lancet* in 1898, and further observations are reported upon by Saifert in *The Lancet* in the September number of this year. These observers agree that the favorable action of duotal and creasotal is not limited to chronic, but that they may be also used in acute, affections of the lungs. Dr. Casserite's method consists in the administration of very large doses of creasotal, and as a result the temperature usually falls in 24 hours, after which time the dose may be somewhat reduced without danger from relapses and sequelae. Creasotal is a powerful antiseptic without unpleasant or dangerous properties. Under its use in mild cases of bronchitis and broncho-pneumonia, the temperature falls at once; the chest sounds become clear and the patient improves rapidly. In the more severe forms of pneumonia and broncho-pneumonia when the infection is virulent, the temperature may be a little irregular until defervescence is established. In pseudo-lobar-broncho-pneumonia the fall in temperature is very early, while in chronic with extensive hepatization there may be no reaction whatever. By the use of creasotal it is claimed that the infectious sequelae, and tuberculosis, gangrene, cardiac and renal affections, become very rare. Dr. Casserite prescribes for adults 5 gms. to be taken morning and night in a cup of hot milk; for children one year and under, 0.25-1 gm.; from 1-4 years of age, 1-3 gms.; from 4-6 years of age, 3-4 gms.; from 6-10 years of age, 4-5 gms. Personal experiments showed that the reduction in temperature was not accidental, though a slight, remittent type of fever may be seen in the broncho-pneumonia type. In catarrhal bronchitis its action is rapid, and in the first stage of pneumonia, bronchial respiration, rales, etc., quickly disappear. Small doses are to be taken for some time after apparent recovery; relapses are quite uncommon. Under the use of this drug the patient is prevented from infection of tuberculosis; the stomach is not disturbed, cardiac affections or albuminuria do not contraindicate the use of the drug. With regard to the dose, it seems exceedingly large, and we would, therefore, recommend about one-half the quantity given at shorter intervals, and increased rather rapidly; but, at the same time, the patient should be kept under careful supervision.

SOCIETY TRANSACTIONS.

NEW YORK DERMATOLOGICAL SOCIETY, SEPTEMBER 26, 1899.

JAMES C. JOHNSTON, M.D., PRESIDENT.

Epithelioma of the Lower Lip.—DR. CHARLES W. ALLEN presented the case of Mr. C——, sixty-four years of age, a watchman by occupation, who, seven years ago, had had a sore on the left side of the lower lip. It had been called a wart, but had disappeared under treatment. It had returned, however, three months ago. When first seen, on September 2nd, there was no doubt about the diagnosis of epithelioma. There were evidences of rather rapid extension inward, and a second wart-like growth had appeared alongside the first. The man had been told by several surgeons that an extensive cutting operation was required, but to this he objected. Dr. Allen had, therefore, applied arsenical paste, and had repeated this application once. Since then it had been dressed with an aristol ointment.

DR. A. R. ROBINSON remarked that it was too early to judge of the effect of the treatment, but it is probably satisfactory. The nodule present was too small to allow of any definite deductions as to its nature. It may have nothing to do with the epithelioma on the lip.

DR. DANIEL LEWIS took the same view regarding the effect of the treatment. He said there was always more or less inflammatory infiltration for five or six weeks after the application of arsenical paste. As a general rule, he would not advocate treating epithelioma of the lip with the paste, believing that operation was ordinarily much more satisfactory.

DR. GEORGE T. ELLIOT said that there were two very suspicious lymphatic nodules under the jaw. They were too sharply defined and distinct to be simple inflammatory nodules. The site of the epithelioma presented an appearance which also seemed to him to indicate that there was still epitheliomatous tissue present.

DR. ALLEN asked for an expression of opinion as to whether the man's chances had been made worse by reason of such treatment.

DR. LEWIS replied that he did not believe that the application of the paste ever made subsequent operation more formidable or tended to promote recurrence or produce any mischief whatever. The only doubt in his mind regarding the case was whether that gland had been present before the first application; if so, it should have been removed at the time.

DR. ROBINSON said that usually treatment by any caustic which was not promptly effectual and complete made the condition worse, for the reason that more blood was brought to the part, the lymph channels were enlarged,

proliferation was more active, and, hence, there was greater tendency to secondary infection.

DR. LEWIS explained that he had referred only to an actual escharotic, like arsenical paste. He agreed with Dr. Robinson that the action of mild caustics, such as nitrate of silver, carbolic acid, etc., often promoted the infiltration of adjacent tissues with cancer elements.

Keratosis of the Lip—Pre-cancerous (?)—DR. ALLEN also presented David K——, twenty-four years of age, married, a tailor, father of one child. He had never had any venereal disease, he said, and there was nothing in the history or examination to indicate syphilitic infection. In spite of this he had been placed on an antisymphilitic course, as a test, but without any appreciable effect on the sore upon the lip. On June 24th, when first seen, the condition had existed for six weeks. It had begun as a fissure, which bled at times. It increased in size, and became a hardened patch, alternately white and blackish, as the patient expressed it. In the center of the patch was a rather deep fissure, painful at times. After softening it by the use of salicylic soap plaster, it had been repeatedly cauterized with trichloroacetic acid, but with very slight effect. The verrucous margin on the inner side is now nearly flat from the burnings. The patient seemed to be rather young for epithelioma to develop.

DR. J. A. FORDYCE thought it might be a precancerous keratosis. It was doubtful whether there was yet any true epithelioma, although he thought there would be, in time, if the case were let alone.

DR. G. H. FOX said that the case was one which would almost certainly become an epithelioma, and, therefore, it should be treated as such. He thought there was an erroneous opinion held by the profession in general about epithelioma occurring almost exclusively after the age of forty years. He had seen similar cases of epitheliomatous keratosis of the lip in persons of the same age as this man, and he has seen superficial epithelioma of the face in subjects as young as twenty-five.

DR. KLOTZ mentioned that a number of cases of epithelioma had been published occurring in children, referring particularly to one case reported by Dr. Hartzell. (*N. Y. Med. Jour.*, 1898, LXVII., 311.)

DR. HENRY H. WHITEHOUSE agreed with the remarks of Dr. Fox.

DR. ELLIOT believed that the physicians who would make a diagnosis of syphilis in such cases simply because the patient was below forty, would likewise err in diagnosis if the same condition were seen by them in a person over forty years of age.

DR. FOX replied that he had known very good surgeons to make an erroneous diagnosis simply because of the youth of the subject.

DR. J. C. JOHNSTON remarked that the question of diagnosis in the case

under discussion could be very easily settled by a microscopical examination.

DR. ROBINSON asked if those present had seen many cases of epithelioma in persons under the age of thirty. In his experience, cutaneous epithelioma was rather rare before the age of thirty years.

DR. SHERWELL remarked that its occurrence in such young persons had been very rare in his experience also. He had seen cancer of the lip only twice in men of twenty-five.

DR. FOX said that he would admit that such cases were rare, but the exceptions were so numerous that it was misleading to state, as the text-books did, that epithelioma almost never occurred under the age of forty.

DR. ALLEN remarked that he intended to subject the case to microscopical examination, and would report upon it.

Xeroderma Pigmentosum.—DR. BRONSON presented a patient with the following history: The patient was a girl, eight years of age, of sturdy, well-nourished appearance, but rather small for her age. Her mother stated that when the child was about four months old she noticed a decided disposition to redness of the face, especially across the bridge of the nose and beneath the eyes. Whenever she had been exposed to the sun the face would become swollen and red as if from sunburn, the effects of which would last for several days. Later on there was a tendency for blisters to form after such exposures, which were attended with considerable soreness and would last for a week or ten days. About four years ago the mother first noticed that the face and hands were much freckled, and at this time also warts began to appear on the face. There was never any excoriation nor discharge except at the time when the blisters occurred. There has never been any considerable itching. The spot of melanoderma on the temple first appeared about two years ago.

On examination, the face, especially over the cheeks, nose, and chin, looked rough and scaly, and at first glance suggested eczema. On closer inspection it was seen that there were numerous warty elevations upon the cheeks and about the *alae nasi*, abundant freckles and in between a multitude of shallow, depressed, smooth or slightly puckered scars. Underneath the eyes the scars are flatter, larger and have a glazed look, and there is some ectropion, especially of left eyelid. On the right temple was a deeply pigmented spot the size of a finger-nail. Here and there little telangiectases, not numerous, some as large as pinheads and of bright red color, disappearing on pressure; others of arachnoid character, but very small. On the hands the conditions are similar. There are numerous freckles on backs of hands and wrists, few scars and but faint signs of telangiectasis. There are a number of warts here, but partaking more of the character of *verrucae*

vulgares, and much denser than those in the face. Some of the warts on the face had been removed.

Dr. Bronson said that there seemed to be a closer relation between the



changes that had taken place and some previous inflammation. According to the history given at first, there was only a peculiar susceptibility to exposure to heat, particularly from the sun, with the effect of producing not only erythema but blisters, even when the exposure was apparently incon-

siderable. Even now the face always becomes worse upon exposure to the sun. It was evident, however, that the chief factor could not be light, inasmuch as parts not exposed were also affected, as on the chest and arms. It has been stated that the disease rarely extends below the nipples, but it yet occurs on parts usually covered.

It did not seem to him that the changes corresponded to those in senile degeneration, for the lesions were more or less circumscribed or discrete and each apparently represented a previous inflammatory lesion. He referred to a letter recently received from Dr. Bowen, of Boston, under whose charge the case had formerly been. Dr. Bowen stated that when he saw the case some three years ago, there was an acute vesicular outbreak on face and hands following exposure to the sun, and the disease *hydro æstivale* was suggested, though subsequently he also regarded it as *xeroderma pigmentosum*. At one time (in 1896) he had removed a small nodule from the conjunction of one eye, which, on microscopic examinations, proved to be epitheliomatous.

DR. P. A. MORROW concurred unqualifiedly in the diagnosis. It was a very typical example of the disease, and was the first case of the kind that had come under his own examination.

DR. ROBINSON also accepted the diagnosis given.

DR. FORDYCE thought that Mr. Jonathan Hutchinson's designation of this as "premature senility" of the skin was a very apt one.

DR. JOHNSTON thought the case illustrated very beautifully one etiological factor, *i.e.*, the effect of light on the skin. He had seen three of these cases, and in each of them the disease had stopped at the line of the clothing. Last summer, at Edinburgh, two cases had been presented at the Royal Infirmary. One of these patients, a girl, wore out-doors in the daytime a brown tissue veil, and her skin was thickly smeared with an ointment containing a brown pigment. For a long time these measures had served to control the spread of the disease, the chemical rays of light being excluded. The girl was in fair condition.

DR. MORROW said that it seemed to him a question as to whether the etiological factor referred to was really responsible for the condition. Certain diseases, it was well-known, had a preference for certain localities, and this was determined by certain peculiarities of anatomical structure. In the case cited the improvement might have been due to the effect of local treatment.

DR. ELLIOT remarked that Riehl had presented a case in which the disease had not developed until the age of sixty years, so it hardly seemed probable that light had anything to do with the origin of the process.

DR. BRONSON said that there seemed to be a close relation between the changes and the inflammation. According to the history in this case, there had been at first only a peculiar susceptibility to light, particularly sunlight. In addition to this, blisters had been produced. Even now the face

was much worse upon exposure to light. It was evident, however, that light was not the only factor. As a rule, the pigmentation did not extend below the region of the nipple; the upper part of the chest was habitually covered. The condition did not seem to him to correspond accurately to the changes of senility, for the efflorescences seemed to be quite limited in area. Each one seemed to represent an antecedent inflammatory lesion. Subsequently there were atrophy and the formation of warts. In the note from Dr. Bowen he stated that there had been an acute vesicular outbreak. After having watched the case for a time he had come to the conclusion that it was one of xeroderma pigmentosum. An epitheliomatous nodule had been excised from the eye. This early occurrence of epithelioma seemed to the speaker of special interest.

Aenitis.—DR. C. W. ALLEN presented a woman with a peculiar eruption on the arms, similar to some cases that had been previously presented to the society, one by himself. It was a suppurative process leaving pitting like *acne varioliformis*.

DR. FORDYCE thought the case was a fairly typical one. The lesions seemed to be more superficially situated than in some of the cases of this kind. The atrophy and scar formation were certainly very characteristic.

DR. ELLIOT thought a much better name for this condition was *hydradenitis*. The woman was certainly not a tubercular subject, yet from the description given of tuberculides and of paratubercular lesions it would seem that this should be a case of that class. He would like to hear from Dr. Johnston on this subject.

DR. JOHNSTON said that he had carefully studied four or five of these cases. The clinical appearance had been nearly the same in all. The term in general use is *hydradenitis*, but it might occur absolutely independently of all the skin appendages, so that some other term should be found to describe the condition more accurately. The process was undoubtedly a *granuloma*. The necrosis was such a marked feature in these cases that the term "*necrotic granuloma*" seemed to him especially descriptive. In his opinion, all *granulomata* were due to some kind of poisoning. All of these cases did not, by any means, occur in tuberculous subjects; Dr. Allen had reported a case in point, occurring in a perfectly healthy subject. Nevertheless, of the cases that he had collected and reported, 56 per cent. had occurred in tuberculous subjects.

Scleroderma.—DR. GEORGE T. ELLIOT presented a case of *scleroderma* which had begun twelve years ago. The patient had been first seen ten years previously, at which time she had been engaged in typewriting. The disease had appeared first on the tips of the fingers, and had then ex-

tended up on to the wrists and arms, and had finally appeared on the face. He presented the case on account of the sclerodactylie existing and especially for the reason that though the terminal phalanges were greatly shortened, still the joint was very slightly affected and the phalanx could still be flexed and extended to a considerable degree.

DR. MORROW said that the pathological basis of these changes had not been very definitely determined. These cases certainly resembled clinically certain changes met with in leprosy, but he did not accept the theory that it was really a form of leprosy. The changes apparent in other parts of the body had interested him, particularly as he understood that the sclerodermatous patches on the face had improved.

DR. ELLIOT said that ten years ago she had been treated for a time by hot water and massage. He had not seen her for fully nine years, during which time she had received no treatment, yet there had been a decided improvement in the disease as a whole.

DR. BRONSON asked how often a relation between this condition and a general marasmus was found. He only recalled one case of sclerodactylie—a very much more marked one than that just presented—and it had been associated with a marked marasmus.

DR. ALLEN said that this was the first case he remembered in which the terminal phalanges were so implicated, and yet the mobility of the joint was preserved. He recalled a case in which the fingers tapered very markedly and the nails were only about one-eighth of an inch in length. The skin of the face was very tense, giving a mummified appearance to the countenance.

DR. FOX said that he had shown two cases to the society in which the term scleroderma had been used. The skin was hidebound and hard, but the disease seemed to him primarily of nervous origin. In one of the cases he had presented there had been the same glossy condition of the fingers and shortening of the finger nails, but with this a clubbed condition of the terminal phalanges. He had seen just such a case a few days ago associated with atrophy of the face. Last spring he had presented a boy with marked wasting of the subcutaneous tissues, but the skin itself did not seem to be affected, although it had been more or less hardened in places. We must recognize, therefore, that under the term scleroderma are included several distinct pathological conditions, some of which do not primarily affect the skin.

DR. KLOTZ called attention to the similarity of the case with one presented by him before the Society last winter. It was difficult to estimate the effect of treatment in such cases during the milder season, because as a rule they exhibit marked improvement and generally do better in warmer weather. Although his patient was not in perfect health, she certainly did not show any signs of a state of marasmus. She had been treated with thyroid tablets for several months, apparently without the slightest benefit.

DR. SHERWELL said that his case, referred to by Dr. Fox, had shown progressive loss of fat and subcutaneous tissue, the skin itself not being especially affected, but being firmly attached to the aponeuroses of the muscles, doubtless the muscles were somewhat atrophied, but not so much as to affect movement or function. He also believed in its neurotic causation.

DR. ELLIOT said that in the symptomatology of scleroderma, in general, it had been observed that the muscles and aponeuroses would be affected, and that these people often died of sclerosis of the internal organs; hence, in the terminal stages it was not surprising to have marasmus.

Keratosis of the Palm.—DR. ALLEN presented a physician with keratosis which had existed for thirteen years. At times, little sago-grain nodules appeared, which were softened by the application of salicylic acid ointment, and cut out.

DR. FORDYCE said that the underlying condition was usually a hyperemia or dilatation of the vessels; the keratosis itself could be relieved without much difficulty, but was apt to recur.

DR. BRONSON said that about all that could be done was to get rid of the hypertrophy of the epidermis, but this was quite important.

DR. KLOTZ thought that these conditions were always more or less congenital. Some of them were associated with hyperidrosis, while in other cases visible perspiration was entirely absent. He had had this patient under his observation for a short time several years ago, while he was serving on the house staff of a hospital. While he was engaged in original work, the condition became decidedly worse, and little progress was made with the treatment. He then had used the salicylic acid soap plaster with some temporary benefit, particularly as regards the fissures. He had several times seen good results from the internal use of pilocarpin in cases not associated with hyperidrosis; in one which he had published in 1890, great improvement had been obtained, which lasted for at least six months after treatment had been stopped.

DR. ALLEN said that he was of the opinion that the keratosis in this case was the result of taking arsenic. Up to the age of thirteen years the patient had been entirely free from anything of the kind. He had then taken for a long time as a medicine large doses of arsenic. The speaker said he believed this was the explanation of the keratosis, although it was difficult to understand why the manifestations persisted so many years, but we know that, in some instances, they did so persist.

DR. MORROW said he doubted if any such effect from any drug would persist for so many years. Keratosis might be produced by arsenic, but he was of the opinion that it disappeared soon after the discontinuance of the drug.—*Journal of Cutaneous and Genito-Urinary Diseases.*

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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The Etiology and Prophylaxis of Scurvy. A special correspondent of *The Lancet* (Oct. 14, 1899), writing from Russia, quotes from a series of articles written by the late Dr. Iskerski, who had devoted many years to the study of scurvy. Dr. Iskerski believed it to be due to a special poison generated in stale or spoiled flour, and capable of retaining its activity even after the flour has been made into bread or biscuits. This view had forced itself upon him after observing that some of the Russian tribes, though living under the most unhygienic conditions climatically, and surrounded by filth, but living solely on animal food, did not contract scurvy, while it broke out among some of the finest of the Russian troops, in spite of the fact that they enjoyed a most liberal diet, rich in albumens, fats, starch, salts and vegetable acids. It seems that this disease is only found in races or people who consume food made from either wheat or rye flour, while among those who use maize or rice, as in Roumania and Japan, it is not met with. The symptoms of scurvy suggest rather a chemical than a bacterial poison as the cause. It is certainly not a climatic or soil disease. Pellagra is the disease most resembling it. Dr. Iskerski dwells specially on anemia and hemeralopia—night blindness—as symptoms of this malady. If his contentions are true, the remedy is clear—flour should not be stored for any great length of time, and even then it should be placed in well ventilated, specially adapted rooms.

An Epidemic of Typhoid Fever in Oberbipp: A Contribution to the Etiology and Hematology of "Typhus Abdominalis." Naegeli (*Corres. blatt f. Schw. Aerzte*, No. 18, Sept. 15, 1899) reports an endemic of typhoid fever which broke out in March, 1899, in the almshouse at Oberbipp, many individuals being attacked within a few days of one another. Some were of an extremely mild type and ordinarily would not have been recognized clinically, others were more or less severe. The character of the onset in so many at almost the same time suggested the pos-

sibility of ptomain poisoning, but the clinical course, the Widal reaction and in some the necropsy, settled beyond a doubt the true nature of the malady. The water supply was examined with negative result. It was then elicited that the general utility man of the place, whose duties were in part to milk the cows, had suffered several weeks before from the disease in its ambulatory form. He had recovered before the outbreak, but a couple of months later the Widal reaction was positive, and an examination of his blood showed the following: Neutrophile, $76\frac{1}{2}\%$; lymphocytes, 15% ; transition form, $5\frac{1}{2}\%$; eosinophile, $2\frac{1}{2}\%$. The author believes the differential count will prove to be a valuable diagnostic aid in recognizing typhoid fever, especially those latent or abortive cases in which one fails to get the Widal reaction, and as the blood changes remain some weeks or, in children, even a few months, before the normal relation is again reached, it may be of value later, as the above case demonstrates. The milker, then, having undoubtedly had the disease, it is not difficult to see the probable cause of the endemic, for though the milk in the institution was boiled, it is scarcely likely that every drop of milk was poured out, and the dregs served to recontaminate the milk when it was replaced in the cans. Naegeli then puts 3 questions as follows: (1) Do the abortive and most mild cases of typhoid yield the Widal reaction? (2) Is the differential leucocyte count of clinical value, and, if so, has it the same or better results in abortive and mild cases than the Widal reaction? (3) Can typhoid be absolutely diagnosed by either one or both of the foregoing methods, when they do not present a trace of the disease clinically?

He gives the following answers: (1) The serum reaction is found not only in abortive and ambulatory cases, but also in those which clinically are completely latent. (2) The blood examination presents as much of value as the serum reaction; indeed, it may occur when the serum reaction fails. (3) The two modern methods show that the morbidity of an outbreak is much greater than previously supposed. (4) Both methods enable one to recognize the previous existence of the disease in those who have recovered, and the blood examination often enables one to approximate the time of the attack; but the latter remains at most a few months, while the serum reaction lasts for years. As to the method of performing the serum reaction, he thinks the dilution usually employed is not high enough. He takes the clear serum and makes dilutions of from $\frac{1}{10}$ to $\frac{1}{200}$ with a 10 hour, cloudy, actively motile typhoid growth in bouillon, and then studies a drop under the microscope. Clumping and cessation of movement are requisites for a positive diagnosis. The blood changes are briefly as follows: Neutrophiles decrease in number in the first stage of the disease (rising temp.) to about a half, fall in the second stage (continued fever); third, stadium (remission), still further reduction, reaching the maximum loss in the convalescence. In the convalescence they begin to assume their proper number, but that only obtains after some weeks. In relapses the same is true, just as in the original affection, while complications, such as parotitis, cystitis, otitis manifest themselves quite early, even before physical signs justify the making of a diagnosis. Not less valuable are the variations in number of the

lymphocytes, first and second stages, considerable diminution. After the second stage, they begin to increase till an excess is present and this is preserved for some time after convalescence. Eosinophile cells are lessened at the onset of the disease; indeed, almost disappear in stages 1 and 2. The reappearance of these cells is of favorable prognostic import. From the above it is evident that the blood examination then may be of value in those cases where the serum reaction fails.

Bronchiolectasis: Ulcerative Broncho-Pneumonia; or Honeycomb Lung. Buchanan (*Liverpool Med.-Ch. Jour.*, July, 1899) reports a case of this interesting condition. It is most common in young children. It clinically resembles capillary bronchitis, but the physical signs in the lungs vary from day to day more than in that disease. The honeycomb lung is brought about by an inflammatory process in the alveoli, which causes more or less dissolution of the latter, with consequent cavity formation. Some of the vomicae directly communicate with dilated bronchioles. In those cases which do not prove fatal, a great deal of fibrosis of the lung occurs, and such cases have at times been described as cases of fibrous phthisis. The relation of tuberculosis to this condition is not altogether clear, but it is likely that there is both a tuberculous and a non-tuberculous form.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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On the Recognition of Enlargement of the Left Auricle by Percussion and on Other Clinical Uses of Dorsal Percussion. Ewart (*Brit. Med. Jour.*, Oct. 28, 1899) recalls the fact that the normal post-cordial dullness contains a smaller and more accentuated area of dullness, which is yielded by the left auricle. This smaller space, the "left auricular dullness," is a semilunar area, convex upward, including the eighth and ninth dorsal spines. It measures $3\frac{1}{2}$ inches in the transverse and $2\frac{1}{2}$ inches in the vertical diameter. In mitral stenosis of milder grades this area is enlarged particularly upward, in more advanced cases the whole post-cordial dullness is increased, but still within it the left-auricular dullness is found also enlarged. Aneurism may lead to error, and Piorry has

described a case of esophageal cancer that gave an area of dullness that might easily have been confused with that of the left auricle. The interscapular dullnesses are of great importance, and their position and extent are of the greatest positive and negative value. The first is indicated by a report of a cancer of the esophagus at the infratracheal level, which gave an increase in the normal relative dullness of the right interscapular region, and an area of dullness extending downward from the fourth dorsal vertebra on the right. Autopsy showed a cancer occupying the position indicated. The fifth dorsal vertebra is invariably dull, directly over it and a little more to the right of it than to the left ($\frac{2}{3}$ inch and $\frac{1}{3}$ inch respectively). If this area is increased, enlargements of the infratracheal glands is indicated, but E. thinks that the enlargement is usually more to the right than to the left.

The Immediate and Remote Effects of Athletics upon the Heart and Circulation. Stengel (*Amer. Jour. of Med. Sci.*, Nov., 1899) records the results of his observation upon the hearts of athletes for 6 years. He concludes that over-distention of the heart is frequent in athletic contests, and may do permanent harm if the individual is in ill health or badly trained. Hypertrophy and symptoms of over-action sometimes result from continued athletics. He finds that in athletes who have stopped exercise to a large extent there is often a continuous enlargement of the heart for some time afterwards. He thinks, with Allbut, that "second wind" is the recovery of the dilated right heart after preliminary over-distention and the consequent relief of the lungs. He does not agree, however, with the same author that the process is a harmless one; but says it is hardly conceivable that some damage is not done by such processes.

The Form of the Chest in Phthisis, and its Significance. Woods Hutchinson (*Brit. Med. Jour.*, Oct. 28, 1899) publishes the result of the measurements of the chests of 82 patients suffering from phthisis pulmonalis. The results show that in his series the tubercular chest, instead of being "flat," as usually described, is really rounder than normal. In the English series the average antero-posterior diameter was 8 inches, 4 inches above the normal; and the transverse diameter 10.1 inches, or one inch below the normal; and the breadth index 79.6. In the American cases the breadth index was 79.3. The normal breadth index he determines to be 71. The similarity in results in the two series is striking. He explains the discrepancy between the appearance of the tubercular chest and its actual shape by the fact that the true tubercular chest is rounded, and consequently the scapulae tend to roll forward, so that the front of the chest looks flat. This explains the appearance of the scapulae called "alar." The breadth index of the chest at 15 years of age is 80, and while it cannot be proven without long series of measurements and observations, Hutchinson suggests that the phthisical chest is one that has been arrested in development about that age, and that the pressure of the muscle and arms coming too far forward has hampered respiration and caused increased susceptibility to tuberculosis. The increase in length of such a chest is real and not ap-

parent, as shown by measurement. "The tubercular chest is not only relatively but absolutely deeper, narrower and longer than the normal." He suggests as a remedy exercises that will develop the great pectoral muscles and pull the chest into shape. A consideration of the comparative anatomy of the chest is appended.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Gastrosuccorrhea. Gerling (*Med. Rev.*, Vol. XXXIX., No. 8) reports a case of the above affection in which the prominent symptoms were an intense feeling of hunger which appeared at any time of the day, belching, pyrosis, severe pains in the stomach and back, frequently accompanied by nausea and vomiting. Appetite good, bowels constipated, gastric region not sensitive to pressure, urine rich in phosphates and at times of alkaline reaction. Examination of the stomach contents 7 hours after a Leube-Riegel test-dinner showed a total acidity of 50; free HCl, 0.18; peptones present. Examination of contents of fasting stomach on 5 occasions revealed the presence of about 180 c.c. of gastric juice. The author excluded gastric ulcer by the pain being present irrespective of food, absence of sensitiveness on pressure or hematemesis. Myasthenia was excluded by the absence of the splashing sound and the freedom of the contents from any particles of food. Dilatation of the stomach by the absence of fermentation and particles of food in the stomach-contents. The gastric crisis of tubes were excluded by the absence of other symptoms of tabes dorsalis. Hyperchlorhydria could not as easily be differentiated, although the lower degree of acidity and the fact that the condition of the patient was the same whether a proteid or vegetable diet was consumed, would point rather to gastrosuccorrhea as the cause. The treatment consisted in the administration of alkalis in combination with bismuth subnitrate and morphin and lavage. Patient improved.

On the Diagnosis of Cancer and Tuberculosis of the Cecum. Obrastzow (*Bolnitsh. Gaz. Bot.*, Vol. X., No. 32) reports one case of cancer and one of tuberculosis of the cecum, which form an addition to 2 cases of cancer and 5 of tuberculosis in the same region, reported in *Vratch*,

Nos. 27 and 28, 1898. Speaking of the differential diagnosis between the two affections, the author remarks that in cancer a tumor is palpated, while the intestine cannot be felt; in tuberculosis, on the other hand, the cecum is distinctly palpated, the walls are more or less uniformly infiltrated, presenting the phenomena of a chronic typhlitis, in this case tubercular. The finding of tubercle bacilli in the feces is of great importance. In the case reported by the author, tubercle bacilli were found in the first examination, while their presence could not be revealed on subsequent examinations. This, however, may also occur in the sputum, and the author, therefore, believes that the presence or absence of tubercle bacilli in the feces is of as much diagnostic value as is their presence or absence in the sputum. In the 8 cases in which an infiltration of the cecum and ileum was present, tubercle bacilli were also found. [The failure to find tubercle bacilli in the feces of patients suffering from intestinal tuberculosis may be due to the fact that the feces examined are in a liquid form, thus rendering the discovery of the bacilli extremely difficult, if not impossible. The method recently advised by Rosenblatt (see INTERNATIONAL MEDICAL MAGAZINE, Sept., 1899) obviates this difficulty.—ED.]

Esophagoscopy—Its Application in Two Cases. King (*New Orleans Med. and Surg. Jour.*, Oct., 1899) points out the usefulness of the esophagoscope in the inspection and treatment of the esophagus. By means of this instrument the entire mucous membrane, as far down as the cardia, can be seen, pathologic conditions recognized and foreign bodies removed. The instrument employed is one invented by Stoerck and consists of a long metal tube of various sizes and diameters. The light is reflected by means of a mirror. Its introduction is not difficult. The patient is made to lie supine upon a table with the head thrown back over the edge to straighten the spine and bring the mouth as nearly in line with the esophagus as possible; he is then directed to assist the passage of the tube by acts of swallowing. In some intractable cases an anesthetic may be necessary. By the aid of this tube the author was enabled in one case to diagnose malignant disease of the esophagus, and in another to assure the patient that the pin accidentally swallowed and felt in the esophagus was not there.

NEUROLOGY.

UNDER THE CHARGE OF

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A Critical Summary of Recent Literature Concerning Some Recently Described Reflexes. Sailer (*Amer. Jour. Med. Sci., Phila.*, Oct., 1899, Vol. CXVIII., p. 446) considers some of the recently described, or lately resurrected, cutaneous, muscular and tendinous phenomena. The hypo-

thenar reflex is obtained by pressure upon the pisiform bone, upon the flexor tendon of the ulnar side of hand, upon the little finger, and by passive abduction of the little finger. The result of such stimulation is the appearance of a fold on the ulnar side of the hand. This fold is due to contraction of certain small bundles of muscle fibers that arise from the edge of the palmar aponeurosis and it persists so long as pressure is maintained. The reflex is without known pathologic significance. Babinski's toe reflex consists in dorsal flexion of the toes, particularly of the great toe, when the plantar surface of the foot is irritated. Babinski claims that it is significant of a diseased condition of the pyramidal tracts and that it is valuable in differentiating hysterical and organic hemiplegia; his claim, however, is not accepted by all. Among the pupillary reflexes are the contraction associated with closure or attempted closure of the eye, and the so-called cortical or attention reflex. In the former the immobile and dilated pupil of general paresis is contracted by the effort of the patient to close the eyes against resistance. The theories offered in explanation of the phenomena observed are, first, a possible connection between the cells of the facial nucleus and those of the oculomotor nucleus; second, that innervation of the orbicularis palpebrarum is accompanied by irritation of the pupillary contracting center in the oculomotor center when the latter is so degenerated that ordinary impulses do not pass. A condition of exaggerated irritability of the smooth muscle fibers may also exist. A modification of this reflex is the temporary persistence of contraction when a patient with immobile pupils closes the eyes and then opens them. Contraction is more vigorous if the patient fixes some object and attempts to close the eye against resistance. This modification is not always significant of disease. The cortical reflex described by Piltz proves the influence of the activity of the higher psychical centers upon the pupil. The method of testing is as follows: The patient, placed in a moderately illuminated room, fixes a point on the opposite wall, and, without changing the fixation point, turns his attention upon first a bright object and then upon a dark object in the periphery of his visual field. Directing attention to the bright object causes narrowing of the pupils, and widening takes place when attention is put upon the dark object. The same reaction is observed when the objects are imaginary. That the reaction is not due to circulatory disturbance was experimentally proven.

Alexander Bruce (*Scot. Med. and Surg. Jour.*, Vol. V., No. 3) made a diagnosis of cerebellar tumor in a case in which the chief symptoms were suddenly developing deafness of the left ear, a tendency to fall toward the left, ataxia of the limbs, vomiting, left-sided occipital and parietal headache, tenderness on tapping the left side of the skull, dimness of vision, a condition of the disks which suggested a moderate degree of papillitis that had subsided into atrophy more complete in the right eye than in the left, slight nystagmic movements, and contraction of the visual fields. The nucleus of Deiters is connected with the cerebellum, with the semicircular canals, with the nucleus of the abducens nerve on the same side, with the

nucleus of the oculomotor nerve on each side, with the anterior cornu in the same side of the cord, and to some extent with that in the opposite side. Each nucleus of Deiters, when stimulated either from the cerebellum or the semicircular canals, may thus be expected to influence the movements of the same side of the body and the lateral deviation of the eyeballs to the same side; and in smaller degree the movements of the opposite side of the body. When the influence of Deiters' nucleus is removed on one side, and when the corresponding abducens nucleus functionates and both eyes are directed to this side, according to Bruce, the contraction will be unsteady and nystagmus will occur. When the corresponding arm is moved no paresis is seen, but the movement is unsteady. Bruce concludes that the tumor in his case must have compressed Deiters' nucleus. The left cerebellar hemisphere was exposed during an operation and a tumor was found but could not be removed. The patient died three days after the operation. At the necropsy a vascular fibrosarcomatous tumor of the size of a walnut was found in the situation diagnosed—in the posterior fossa of the skull, adherent to the dura and immediately behind the internal auditory meatus. It had its origin in the flocculus, and had involved the dura and petrous bone secondarily, and the nucleus of Deiters was evidently compressed. Bruce believes that in the now established connection of the nucleus of Deiters with the abducens nucleus and with the same side of the spinal cord, we have valuable data for the localization of cerebellar disease.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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Nephritis without Albuminuria. Jennings (*Med. Age*, Aug. 10, 1899) reports two cases of the above. In one the albuminuria was only found once (a trace), although repeated examinations were made. In the other it was only found twice, covering a long period of time. Both of these cases had numerous casts on repeated examinations. After reviewing the authorities on this subject, he deduces the following: (1) That very rarely chronic parenchymatous nephritis has been observed in which albumin and casts have been absent from the urine for certain periods of time. (2)

That chronic interstitial nephritis is characterized by a urine in which albumin and casts appear in smaller quantity, and that frequently both disappear for short or long periods of time. (3) That the appearance and disappearance of casts and albumin in nephritis are synchronous—in other words, that the pathologic changes that cause albuminuria and cylinduria are identical. Simon particularly is emphatic on this point. The author does not agree with Simon, who states that the reason albuminuria is not found in these cases is because of the carelessness of analysis, and he says that this could not have happened in his two cases.

Preliminary Notes on the Prognosis of Nephritis. Cabot and White (*Boston Med. and Surg. Jour.*, Aug. 10, 1899), after studying 423 cases of diagnosed nephritis, came to the conclusion that there are a few cases of chronic nephritis that entirely recovered. They report two cases of this disease, one that has been absolutely free from any of the characteristic symptoms for the last six years, and another for the last three and one-half years. After looking over the literature on the subject, they found that the opinions of the various authorities differed widely, and came to the following conclusions: (1) Chronic nephritis is not an absolutely incurable disease. Recovery occurs in rare instances. (2) Chronic nephritis may exist for a long series of years without causing any apparent constitutional disturbance. (3) The average duration in 332 cases of chronic nephritis was 19 months. (4) Acute nephritis is less common than has been supposed; many cases formerly diagnosed as such have been shown to represent exacerbations in chronic nephritis.

Renal Casts—Their Significance and Detection. Linsley (*Med. Rec.*, Oct. 21, 1899) states that there are a great many more cases of chronic interstitial nephritis than is commonly supposed. These diseases occur generally after middle age, in apparently strong, healthy and well-nourished individuals, and are the most insidious of all physical derangements. The first symptom is frequent micturition, followed by headache, derangement of digestion, and slight dyspnea. The quantity of urine may be normal, and only a mere trace of albumin found. This is the time when a careful microscopic examination should be made, and by the various casts found a proper diagnosis made. The author sums up the various casts as follows: Hyaline casts are the least important, and are due to renal irritation; granular casts represent a nephritis of some standing; epithelial and mixed casts represent an acute inflammation; blood casts are reliable evidence of renal hemorrhage; pus casts, which are rare, are found in multiple renal abscesses, pyelo-nephritis, and almost any suppurative process involving the parenchyma of the organ; fatty casts represent an active degeneration of protoplasm, or a severe toxemia; casts composed of bacteria may be found in cases of septic nephritis; waxy or amyloid casts are generally due to various infectious diseases. [The last as to waxy and amyloid casts, we consider as open to question.—Ed.]

DERMATOLOGY.

UNDER THE CHARGE OF

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Two Epidemics of Alopecia Areata in an Asylum for Girls.

Bowen (*Jour. of Cut. and Gen.-Urin. Dis.*, Sept., 1899) reports two most interesting epidemics of alopecia areata, occurring in an institution for homeless girls in Boston. Several months after a young girl had become attacked with areate baldness of the scalp, the disease broke out among the other inmates of the home in which she lived, and spread so rapidly that in a short time 63 of the 69 girls were attacked. After several years' absence the original patient returned to the asylum, and again gave rise to an epidemic of the disease, this time 26 out of 45 inmates becoming affected, although only 4 of these were among those previously attacked. The disease differed only from the ordinary type of alopecia areata in the smallness of the patches and their angularity. Numerous examinations of the hairs failed to show the presence of any parasite. Similar epidemics have been recorded by French observers, but heretofore none has been noted in America.

A Note on Leprous Fever. Lewers (*Brit. Jour. Dermat.*, Oct., 1899) reports a case of leprosy in a patient at the Charing Cross Hospital, and discusses the frequency and nature of febrile attacks in leprosy. Whilst it is contended that these attacks have been frequently confounded with malaria, the writer believes that leprosy bears a closer resemblance to the fever of tuberculosis pulmonalis. In concluding, he puts forth the following series of suggestions: (1) That there is an essential leprosy fever due to the presence of the bacillus leprae or its toxins. (2) That this fever is always intermittent, if uncomplicated. (3) That this fever may occur at any period of the disease, including the so-called prodromal period of some writers, and may or may not be accompanied by an eruption. (4) Since all forms of the disease (lepra) depend on the same organism, the fever probably occurs in all, although in varying degree. (5) That when fever of a continued type is observed in leprosy it is due to the presence of other toxins acting either with, or entirely apart from, those of the bacillus leprae. (6) That the essential fever of leprosy has little clinical import beyond indicating that the disease is active and progressive.

Erythema Toxicum with Fatal Termination. Kaposi (*Allgemeine Wiener. Med. Zeit.*, Sept. 19, 1899), after remarking upon the erythemata produced by such drugs as quinin and antipyrin, reports a

fatal case of erythema of unknown origin occurring in one of his female patients. This woman became ill on May 27th, exhibiting upon the body kreuzer to thaler sized red spots with blackish-blue centers, evidently hemorrhagic. Extensive hemorrhagic areas were present upon the mucous membrane of the mouth, throat and eyes, and, as was later discovered, also in the trachea and lungs. The patient vomited blood upon one or two occasions. The temperature fluctuated between 38° and 39° C. The patient became progressively worse, and died on June 7th. Late in the course of the disease a curious symptom manifested itself. At the site of the bluish macules upon the skin and conjunctiva there developed large flat blebs, 8 or 10 days after the onset of the attack. These blebs were produced by a lifting up of the epidermis by serum which was expressed from masses of free blood by the contraction of the fibrin. Such a manifestation may even take place in a dead body. Inasmuch as the eruption did not attack the backs of the hands or feet, the disease is to be looked upon as an erythema toxicum rather than erythema multiforme. The patient had taken anti-pyrin and had eaten sausage some days before, but it is impossible to attribute, with accuracy, the toxemia to these causes.

THERAPEUTICS.

UNDER THE CHARGE OF

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The Physiological Action and Therapeutics of Guaiamar, a Derivative of Guaiacol. Butler (*N. Y. Med. Jour.*, Sept. 23, 1899) has found it to be a valuable substitute for creasote and guaiacol. Chemically—it is a glycerol ether of guaiacol, white crystalline powder; melts at 75° C.; is soluble in alcohol, chloroform, ether, glycerin, and in about 20 parts of water; neutral, non-hygroscopic; has a bitter, aromatic taste; may be administered with quinin, cod-liver oil, malt, etc. Its chief value is that it liberates guaiacol in the stomach and intestinal tract. It does not seem to interfere with digestion; in ordinary doses, 3 to 15 grs., does not cause any irritation of the urinary tract. When he administered it to cases of typhoid fever the case seemed to be milder, although cold baths were used when the

temperature arose above 102.5°. In rheumatism, in conjunction with salicylates, and in gonorrheal arthritis an ointment of guaiamar 3ii ung. belladonnae, ung. hydrargyri aa 3iv applied to the parts gave relief. In lung diseases it has the same advantages as creasote, which he believes to be the most efficient drug of this class. It does not disturb digestion, which is a great advantage. Its antiseptic properties make it valuable in diarrheas in children as well as adults. Locally it may be used as an antiseptic wash for the mouth, ulcers, etc. Chronic cystitis also seems to yield quickly under its use.

Succedaneum to Digitalis. Dalton (*Va. Med. Semi-Monthly*, July 21, 1899) believes strophanthus to be the best substitute for digitalis, and prefers it to spartein and alcohol. Although he has found spartein to be useful in cases of mitral insufficiency, where heart failure threatens, it is contraindicated in cases where there is pronounced inflammation of heart, lungs or kidneys. He does not agree with Hare that it is useless, but with Shoemaker, that it is valuable in defective compensation, exophthalmic goiter, and asthma from cardiac origin. In one of his cases, a boy of twelve, he gave 30 gtt. of tr. digitalis, increased to 40 *t.i.d.*, and had started to reduce it when delirium, dyspnea and cyanosis appeared; he substituted tr. strophanthus for a few days, until the alarming symptoms disappeared. Another case he mentions, of alcoholic pneumonia, where digitalis was of little use, while strophanthus and ammonol, for the fever, in conjunction with strychnia, were very effective.

Passiflora Incarnata. Fisher (*Va. Med. Semi-Monthly*, July 21, 1899) has found May Pop (*passiflora incarnata* Lin.) to be a valuable sedative, antispasmodic and hypnotic; also especially useful in the insomnia of old age, spasms from indigestion in children, and hysteria, in the restless vigil of typhoid fever. It can be substituted for opium, chloral and bromids in many cases, and the sleep produced is more natural, the patient is easily awakened, and is not so stupid. It does not produce the unpleasant after-effects which follow the use of the former.

A Preliminary Note on the Use of Asparagus as a Diuretic. Hare (*Therapeutic Gaz.*, Sept., 1899) used an extract made from the tops of asparagus in cases of general edema, with good effect upon the kidneys. The amount of urine was usually considerably increased in the course of a few days. In an advanced case of atheroma, with aortitis, probably fatty heart, it had no effect. In one case digitalis, bitartrate of potassium, and an infusion of juniper berries failed, while under the use of this drug the urine arose from 27 to 40 $\bar{3}$ *per diem*. In one case, he continued its use for a month with good effect so long as the drug was given.

Importance of Internal Remedies in General Surgery. Manley (*Merck's Archives*, Vol. I., No. 7) thinks that many cases might be relieved by proper medication that were formerly considered only from an operative

standpoint. Tuberculous cases often are relieved by mercury, phosphorus, creasote, salol, etc., while iodoform may be injected directly into the infected part. He mentions three cases of cancer of the breast, two of which had their breasts amputated, and neither survived 18 months; while the third was treated by escharotics, and is still alive, although has a running sore and is free from pain. He dwells on the difficulty of diagnosis between neoplasms and syphilitic or tubercular ulcerations, and ends by stating that every surgeon should be as familiar with therapeutics as those men restricted to internal medicine alone.

Relative Toxicity of Cocain and Eucain. Peck (*Jour. Amer. Med. Assoc.*, Sept. 9, 1899) after a number of comparative experiments concludes thus: (1) The action of cocain is inconstant; one never knows whether the symptoms occasioned by like quantities of the drug, in animals or individuals, under like circumstances, will be similar or dissimilar. (2) The action of eucain is constant. The symptoms occasioned by the use of like quantities in animals under like circumstances, and so far as experiments have gone, in different individuals also, are the same. (3) The first action of cocain on the heart is that of a depressant, and on the respiration it is that of a mild stimulant, the after-effects being, on the heart, that of a decided stimulant, and on the respiration, that of a decided depressant. (4) The first action of eucain on both the heart and respiration is that of a stimulant, the after-effects being that of a decided depressant. (5) Cocain causes death in animals by paralyzing the muscles of the respiratory apparatus, the heart's action continuing in a feeble way for a brief period after breathing ceases. (6) Eucain causes death in animals by paralyzing the muscles of the heart and of the respiratory apparatus, they ceasing to operate simultaneously. (7) Eucain in toxic doses nearly always causes nausea, and occasionally vomiting. (8) Cocain is much less nauseating, and scarcely ever causes vomiting. (9) Eucain is decidedly a diuretic, causing renal discharge in a majority of instances in which a toxic dose is used. (10) Cocain is not a diuretic to any appreciable extent, renal discharge having occurred in only one instance in connection with all my experiments. (11) The pupils of the eyes, in nearly all cases of cocain poisoning, do not respond to light and are more or less protruding. (12) The pupils of the eyes in most cases of eucain poisoning do respond feebly to light, and rarely ever protrude. (13) The action of toxic doses of eucain is more like that of a paralyzing, tetanoiding, convulsion-producing agent, than it is like an anesthetizing one, the plantar and cremasteric reflexes nearly always responding. (14) Toxic doses of cocain cause general anesthesia in connection with the other symptoms in the majority of cases. (15) True tetanus, of all striped muscles of the limbs, and Cheyne-Stokes's breathing nearly always occur with the use of cocain, but seldom does either occur when eucain is used. (16) Cocain is at least three times more toxic than beta eucain, and alpha eucain is as toxic as cocain. (17) Boiling does not destroy the efficacy of cocain, but it does modify it, and boiling in no degree lessens the efficacy of eucain.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Action of Carmine upon Toxins. Staudensky (*Ann. de'l Inst. Pasteur*, 2, 25, 1899) found that by adding 0.5 gm. carmine to each 10 c.c. of tetanus toxin he could render the poison inert to animals. When heated to 60°-100° C., however, this protective power was completely lost; but when heated in the dry state in a sealed tube the property was preserved. If the carmine were kept moist for 24 hours it afforded little or no protection. This protection was apparently not due to any combination, for after filtering the carmine out the filtrate again became poisonous. A marked inflammatory infiltration, greater than that resulting from carmine injection alone, forms at the seat of inoculation. In this area the carmine granules have been found to be surrounded by many leucocytes and in 60-70 hours they remove all of the carmine from the area. Staudensky thinks that the leucocytes, attracted by the carmine, destroy the toxin. Other experiments have shown that carmine also protects against diphtheria and other toxins.

The Relation of the Leucocytes to Immunity. Weirgo (*Archiv. de Med. Experimentale et de' Anat. Path.*, Tome X., p. 725) has studied the relation of the leucocytes to the immunity acquired to symptomatic anthrax. In both the natural and immunized animal the leucocytes were found to be active. Even in the natural manner at times more bacteria were killed than would constitute a fatal dose, while all of the bacteria are killed by the leucocytes of the immunized animal. In the immunized animal the leucocytes act very vigorously until the bacteria are exterminated, while in the natural animal the leucocytes repeatedly repel but do not annihilate the invaders. Weirgo, in opposition to the views of Metchnikoff, shows that the normal leucocytes are sensitive and attracted by the bacteria and that during the process of immunization this sensitiveness to bacteria attraction is much increased. He believes that the immunity of the rabbit to symptomatic anthrax resides solely in the elevation of the normal power of the leucocyte to destroy the bacteria and to the development of leucocytosis.

The Action of the Digestive Juices upon Toxins. Carrier (*Ann. de'l Inst. Pasteur*, p. 435, 1899) reaches the following conclusion as to the action of digestive ferments upon toxins and antitoxins:

Toxins.—Ptyalin totally destroys the action of tetanus toxin and venom.

Gastric juice in considerable amounts attenuates and often destroys them. Bile attenuates or destroys them, but a considerable quantity is required for the purpose. Pancreatin attenuates tetanus toxin without destroying it; but in large amounts it may destroy it. Venin is readily destroyed by pancreatin.

Antitoxins.—Ptyalin does not modify antitoxic serum. Gastric juice exerts little effect upon the serums, antivenomous serum being a little weakened. Bile does not modify any of the antitoxins studied. Pancreatin strongly modifies and eventually destroys the serum, and the succus entericus seems to possess a similar action. The intestinal bacteria and the intestinal epithelium seem also to be capable of removing the activity of the serums.

The Causes of the Inactivity of Antidiphtheritic Serum When Introduced into the Stomach or Rectum. Nedrigajlow (*Vratch*, Vol. XX., No. 26), having found antitoxin inactive, when administered per os or rectum (See INTERNATIONAL MEDICAL MAGAZINE, Oct., 1899), endeavored to determine by experiments on animals what becomes of the antitoxin thus introduced, and if it is destroyed, where and when the destruction takes place. A number of experiments were performed which seem to have established the following facts: That antitoxin when administered per os cannot be found in the feces. Within 3 hours the serum can be found both in the stomach and small intestine, but not after 7 hours. The antitoxin could not be found in the liver, showing that the latter organ has nothing to do with its disappearance from the stomach. The walls of the stomach and intestines also failed *in vitro* to produce any alterations in the serum. The gastric juice has a very slight, if any, effect on antitoxin. The HCl has no effect whatever on either the toxin or antitoxin. The bile exerts a notable destructive action on the toxin, but none on antitoxin. The pancreatic juice completely destroys the toxins, but has no effect on antitoxin. The author also repeated the experiments of Escherich, who claimed to have succeeded in demonstrating the absence of antitoxin in the blood of the jugular vein after it had been introduced into the portal vein, thus proving that the liver destroys the antitoxin. The results obtained by the author, however, were directly opposed to those of Escherich. The antitoxin was demonstrated in the blood of the jugular vein, thus indicating that the liver does not destroy the antitoxins. The author concludes his very excellent paper by leaving the original problems unsolved. A. R.

Lupus Erythematosus. Good results have followed the suggestion of Hans Hebra to apply pure alcohol continuously to the affected area; or, the following may be used:

R	Menthol,	gr. viij;
	Alcohol (95%),	3jj.
M. S.: Apply continuously.		

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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On the Question of Determining the Quality of the Air of Dwellings by Means of a Solution of Permanganate of Potash. Lebedew (*Vratch*, Vol. XX., No. 25) quotes several competent observers in support of his belief that the amount of CO_2 in the air does not serve as an indication of its utility for respiration. It has been established by experiments on animals that to be poisonous the air must contain 30% of CO_2 , an amount which even the air of the most crowded rooms does not contain. The vitiated air, therefore, owes its bad effects to organic matter derived from the exhalations of the skin, clothes, dust, etc. To determine the amount of this organic matter, the author employs the following method: 0.316 gms. of permanganate of potash are dissolved in 1,000 c.c. of distilled water. To 100 c.c. of this solution are added 100 c.c. of HCl (1:3) and 800 c.c. of water. The solution of permanganate thus obtained is 0.0316:1,000. A solution of oxalic acid is then made up in the following manner: 0.63 gms. of oxalic acid are dissolved in 1,000 c.c. of distilled water; 100 c.c. of this again mixed with enough water to make 1 liter. This solution is 0.063:1,000, and 1 c.c. = 0.008 mgms. of O_2 . The solution of permanganate of potash is then titrated as follows: Two test tubes, each containing 10 c.c. of the permanganate solution, are immersed in boiling water for 10 minutes. (To exclude dust the tubes are closed with rubber stoppers, through which is passed a small glass tube covered by a rubber cap having several slits so that the heated air can pass out, but no dust is admitted.) The tubes are then removed, and 20 c.c. of the oxalic acid solution added to each. They are then titrated with the permanganate until a permanent rose color appears, and the amount noted. Thus the amount of permanganate solution which equals 0.16 mgms. of O_2 is determined. All the appliances used should be scrupulously cleansed with distilled water, strong HCl and bichromate of potash. To test the organic constituents of the air two Pettenkofer tubes are filled with the permanganate solution and joined by rubber tubing, one of the tubes being connected with a bottle of a certain capacity containing water, and the latter with another empty bottle placed at a lower level. The water, by siphonage, enters into the empty bottle, and thus draws the air through the Pettenkofer tubes. (To avoid the action of light on the permanganate, the tubes are wrapped in cloth.) The air is allowed to pass for 3-5 hours

and 10 c.c. from each tube are then titrated as above. Example: Prior to experiments 10 c.c. are taken for titration and 19.8 c.c. are required in addition to neutralize 20 c.c. of oxalic acid solution. Total, 29.8 c.c.; in other words, 29.8 c.c. = 0.16 mgms. of O_2 , 100 c.c. will equal 0.5369 mgms. O_2 ($\times 0.16 = 100 : 29.8$). After the air has passed through the tubes, it was found that 30 c.c. neutralized 20 c.c. of oxalic acid solution, or 100 c.c. = 0.5333 mgms. of O_2 . The difference then is 0.0036 mgms. of O (0.5369-0.5333), which were used up in the oxidation of the organic matter of the air. The amount of air used for the experiments, say, is 36 liters (this is determined by the amount of water passed from the first bottle into the second during the entire experiment.—A. R.), which contained organic matter requiring 0.0036 mgms. for oxidation. One liter would require $\frac{0.0036}{36} = 0.0001$ mgm. O_2 and 1,000 liters of air will require 0.1 mgm. Several experiments performed by the author led him to establish the following rule: The respired air should not require more than 4 volumes of O to oxidize the organic matter contained in 1,000,000 volumes of air.

Report to the Investigating Committee upon the Chicago Draining Canal. Starkloff (*Med. Rev.*, Aug. 5, 1899) contributes a very valuable and interesting paper on the subject of sewage contamination of drinking water. The report refers principally to the water supply of Chicago, and the Chicago Drainage Canal, which is to connect the south branch of the Chicago with the Illinois River. The purpose of this canal is to relieve the river of its burden of filth by conducting a large volume of water from Lake Michigan through it to the Illinois River, as well as to carry away all the sewage of Chicago, which, according to computation, will amount to 375,000 pounds of solid and 670,000 gallons of liquid excreta daily. It is hoped by those favoring the canal that the dilution of this sewage with large volumes of water will accomplish purification. The author quotes many authorities, and cites instances to explode this erroneous theory. In recapitulating the evidences furnished by a mass of overwhelming testimony, he formulates the following conclusions: (1) The bacillus of typhoid fever is the specific cause of that disease. (2) It is discharged from patients sick with the disease in the feces and urine. (3) This bacillus, although not forming spores, is very resistant; (4) it can live not only in water, but frozen in ice for a number of days. (5) There is no substantial evidence to contradict the assertion of authorities that typhoid bacilli, under favorable circumstances, can live and propagate in a running stream, and we have abundant and convincing evidence that sewage-polluted water produces typhoid fever in persons drinking it. (6) A sewage-polluted water may have all the appearances of purity, so much so as to defy the most exquisite tests of the chemist or the exhaustive examinations of a biologist to detect evidence of sewage in it, and still produce typhoid fever in those who drink it. (7) We have the statistical evidence of a number of municipal governments in both this and foreign countries showing the great improvement in the typhoid fever death-rate following either the substitution of a pure for a sewage-polluted water or the cleansing of a polluted water by filtration

through sand, etc. (8) We have the laws enacted by foreign governments in regard to the prevention of the pollution of streams by sewage; and (9) the expressed statement in this and foreign countries of authoritative investigating committees that sewage, no matter how greatly diluted, is not fit for human consumption, and that no river is long enough to purify itself of sewage, even if put into it at its source.

SURGERY.

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Treatment of Certain Functional Derangement of the Abdominal Organs, due to Disturbance of the Solar Plexus. Jaboulay (*Lyon Medicale*, No. 13, 1899) has boldly attempted to cure by an operation one of the series of disturbances which sometimes affect the large organs of the abdomen, as the pancreas, liver, spleen, kidneys and suprarenals, as well as in the aorta. These are traceable to a functional disturbance of the abdominal sympathetic. They occur frequently in neurotics and display themselves at times in strong pulsation in the epigastric region, and inflation and paresis of the intestinal walls. Based on the results that Basedow reached in his treatment of the sympathetic of the neck, Jaboulay took a similar course in these irritations of the abdominal sympathetic. He had only one opportunity of testing it. The patient, a woman of 35, in earlier life had had 5 attacks of purulent salpingitis and hemorrhagic metritis. Her nervous disturbance manifested itself principally by pulsation in the epigastrium, as above mentioned. The author does not dwell on the marked improvement that had occurred in the patient, but on the practicability of the operation he undertook. The technic was as follows: After exposing by celiotomy the pylorus and drawing it downward, the left index finger sought the abdominal aorta; then by the strong pulsation the coeliac axis and renal arteries were readily felt. By means of a grooved director, the coeliac axis and the anterior surface of the aorta were made free. The director was then pushed downward and to the side of the superior mesenteric, the same as in applying a ligature. This exposure was sufficient to influence the branches of the solar plexus, that cross each other on the anterior surface of this part of the aorta after it leaves the semi-lunar ganglion, and the maneuver itself exercised beneficial influence on the functions of the stomach, intestines, liver, spleen, pancreas, kidneys and suprarenals.

A New Method of Reducing Old Dislocations of the Lower Jaw.

McGrau (*Méd. Rec.*, Oct. 7, 1899), having a case of obstinate dislocation of the mandible of five months' standing, successfully resorted to a new method of reduction. A strong steel hook with a short prong running near and parallel to the shaft, was provided. Incisions were made under each zygoma, the fibers of the masseter were separated and the hook slipped in and caught over the bone at the sigmoid notch. After considerable traction upon each side, the dislocation was reduced. Perfect functional restoration resulted.

Carcinoma under the Age of Thirty.

Cumston (*Boston Med. and Surg. Jour.*, Nov. 2, 1899) refers to a large number of historical cases of carcinoma in patients under 30 years of age and presents the histories of 3 cases that have occurred in his own practice. The first patient, aged 19, was jaundiced and had a large tumor in right hypochondriac region. Upon opening the abdomen, the tumor was found to be the enlarged liver. A diagnosis of carcinoma of the liver was made, apparently without any histological study. The second patient, aged 28, had a cauliflower growth of the cervix that histologically was found to be epithelioma. The third patient, aged 24, had an annular tumor of the ascending colon that was found under the microscope to be a cylinder-celled carcinoma. There was a fatal termination in each case.

A Simple Palliative Operation Applicable to Obstructing Cancer of the Pylorus too Extensive for Complete Removal.

Martin (*Univ. Med. Mag.*, Nov., 1899) believes that in the palliative treatment of advanced gastric carcinoma the relief from pain and vomiting and the prolongation of life may be best accomplished by excluding the stomach from the digestive processes. To this end, he has used an operation similar to that of Witzel for gastrostomy in the performance of a duodenostomy. An abdominal incision is made and a tube of the caliber of a 40 French sound laid upon the surface of the first part of the duodenum. Interrupted cat-gut sutures are so introduced as to lift a plication of the bowel well upon each side of the tube, completely covering the portion of the tube in contact with the bowel. Thus a long canal is formed in the wall of the intestine. Between the lower two stitches a slit is made in the intestine and the lower end of the tube introduced into the bowel. The upper end of the tube is brought out through the abdominal incision and stitches are so introduced as to prevent leakage from the newly formed canal. The patient is fed by digested foods introduced through the tube. Both of the recorded cases were well advanced, but in one the patient gained weight and strength; the other patient died. This operation is also indicated in intractable gastric ulcer. After the duodenostomy unirritating antiseptic and analgesic gastric lavage should be used. The course of the cancer is believed to be less rapid when the stomach is thus placed at rest.

On Some Important Points Regarding the Perfection of Asepsis. Beck (*Med. Rec.*, Oct. 7, 1899) says that the factors which may interfere with surgical asepsis are, first, the instruments, suture and dressing material; and, second, the atmosphere, the skin of the patient and the surgeon's hands. Ideal asepsis has been established with the first factors. Atmospheric infection may result from the stirring up of the dust of a room, or from expired air, especially if the surgeon suffers from rhinitis or tonsillitis and talks or coughs over the wound. The mechanical methods of skin disinfection are of chief importance. When possible, the area is to be scrubbed, shaved and covered with a green soap poultice. Before the operation the area is thoroughly scrubbed, under irrigation, with linen compresses dipped in hard fluid soap. This consists of green soap mixed with soft (Stuttgart) sand. This green soap is then used under irrigation, the skin dried, rubbed with gauze compresses wet with 50% alcohol, after which some disinfectant solution may be employed. The following precautions are also advised: (1) Aseptic gloves are worn by the operating surgeon at least during the skin incision. The assistant who passes the instruments and the one who attends to the wound itself wear gloves throughout the whole operation. (2) After incision the wound margins of the skin are covered with sterile napkins, which are fastened to the wound surface underneath the skin margins with miniature forceps, so that the skin wound is not touched at all during the subsequent manipulations. (3) The knife used for the skin incision must not be used for further incisions. The operation should be performed as rapidly as possible. (4) For uniting the wound margins of the skin the subcutaneous method should be preferred. (5) Forceful manipulations, especially blunt operating, should be avoided. (6) The surgeon and assistants wear sterilized suits or gowns. Their heads must be covered with sterilized caps, because in bending over the field of operation it often happens that the heads of the surgeon and his assistant come in contact, whereby infectious material might be introduced into the wound. (7) Long beards are entirely unsurgical. (8) If a surgeon should suffer from rhinitis, tonsillitis, etc., he should use the most minute local precautions, or would better omit operating until recovery. A surgeon should regard it as a crime to operate as long as he suffers even from a slight furuncle on his hand.

The New Treatment of Tetanus. In an article under this heading Lymphear (*Amer. Jour. of Surg. and Gyn.*, July, 1899) gives the following practical conclusion: (1) In wounds of such character that the onset of tetanus is feared, preventive injections of tetanic antitoxin are advisable. (2) When symptoms of acute tetanus arise, hypodermatic injections of 10 c.c. or more of serum should be given every 6 to 12 hours. (3) As early as possible a competent surgeon should be called to trephine, under strictest antiseptic conditions, and inject 6 c.c. of concentrated serum into the brain. (4) In tetanus neonatorum appropriate doses should be given subcutaneously, and into the brain substance through the fontanelles. (5) Combined with the serum treatment should be the free use of those sedative agents which have been found of benefit prior to the introduction of serotherapy.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Adenoid Tumors of the Naso-Pharynx (Tumeurs adenoides du Pharynx Nasal). Menière (*Communication faite à l'Académie de médecine en juillet, 1899*) gives the following interesting statistics and observations: At the close of 1891 he had presented statistics of 1,115 adenotomies. Since this time he has made 2,591. According to his observations, medical treatment for adenoid vegetations is of no value. Operations alone give good results. The author thinks that chloroform anesthesia is too dangerous to be used in young children; the bromid of ethel is safer and better for a complete operation; according to the amount, one can produce a long or short anesthesia. He finds that the chloroform contracts the jaws to such an extent that on withdrawal of the anesthetic for the purpose of passing the instrument the child recovers so quickly that the operation is embarrassed. He has adopted the following technique: (1) Washing of the pharynx 3 or 4 days with warm boracic acid solution. (2) If the adenoids are very large, he recommends their removal by two sittings; first, the gland structure is crushed by means of forceps and after 4 or 5 days the remaining gland structure is removed by curetment by means of the long curet of Lange. If the adenoids are lateral only and not central masses, the crushing is omitted, and the gland is removed at once by means of the same curet. The nostril is then cleansed with an antiseptic wash and sprayed with mentholated cosmolin or vaselin.

Abscess of the Larynx. Haviland Hall (*Rev. Hebdom. de Laryngol., etc.*, No. 36, Sept. 9, 1899) reports a case and shows a specimen of abscess of the larynx. The larynx was of a young girl 17 years of age, admitted December 17th, at Westminster Hospital, for acute Bright's disease and infectious pneumonia. Soon after admission she was taken with hoarseness and dysphagia, and her condition was so grave that laryngoscopic examination could not be made. The patient died December 24th. The autopsy showed that the cartilages were completely necrosed; nearly an ounce of thick, fetid pus was present. The abscess had recently perforated into the larynx by a small opening; both lungs were hepatized; there were also pericardial adhesions; the valves were normal, with the exception of the mitral, around which existed a ring of large vegetations; in the

right lobe of the liver was found a hydatid cyst the size of an orange, containing hydatid membranes and some viscid pus; the spleen and kidneys presented the ordinary toxemic alterations.

Septic Thrombo-Phlebitis as a Complication of Peritonsillar Abscess. M. R. Ward, of Pittsburg (*N. Y. Med. Jour.*, Oct. 14, 1899), reports two cases of this unusual condition—the first, I believe, on record. The condition is somewhat similar to septic sinus thrombosis as a result of mastoid suppuration.

Foreign Body in the Larynx. Walker Downie (*The Lancet*, Oct. 14, 1899) reports a case in which for 4 weeks a small silver coin was lodged in the larynx. The interesting feature of the case was, that although the coin lay on the vocal cords so that the extremities, anterior and posterior alone, could be seen, there was no dyspnea. The coin was removed under cocaine anesthesia by means of Mackenzie's antero-posterior laryngeal forceps. There were no bad after effects, the erosion quickly healing after the removal of the foreign body.

Fibro-Lipoma of the Tonsil. Thomas Amory DeBlois, of Boston (*N. Y. Med. Jour.*, Oct. 28, 1899), reports microscopic examination of a tumor removed from the tonsil, which proved to be a fibro-lipoma—an unusual mixed tumor, having its site in the tonsil.

Relation of Pathologic Conditions of the Ethmoid Region of the Nose to Asthma. Henry L. Swain (*N. Y. Med. Jour.*, Oct. 28, 1899): "The title assumes that either such a relation is supposed to or does exist, and, if the latter, the question arises, What sort of relationship is it? Shall we consider that the nasal condition produces the asthma, cause and effect, or is the ethmoid condition an accidental complication of the asthma, or are they both the result of some depraved condition in these two diseased processes; and, if the latter is the case, what is the exact role of the nasal disease in the asthmatic complex?" The paper deals with the local lesions which might produce reflexes and also systemic conditions which might produce local reflexes. In conclusion, he says the deduction is plain, therefore, that when treating many of the pathologic conditions in the nose, whether asthma exists or not, we must often look outside of the nose, and many times outside of the body, for the cause which led up to them.

A Case of Empyema of the Ethmoid Cells (Un cas d'empyeme des cellules ethmoidales). Lefrancois, de Cherbourg, reports a case of empyema of the ethmoid cells with orbicular complications. From the symptoms given, he calls attention to the fact that more frequently the ophthalmologist is consulted, when in reality it is a case for the rhinologist. He considers the condition not so rare as generally supposed. Operative interference resulted in cure of the case reported.—(*Rev. Hebdom. de Laryngol., etc.*, No. 40, Oct. 7, 1899.)

Use of Rubber Splints in Intranasal Operations. J. Price Brown (*Canadian Pract.*, Vol. XXV., No. 7): These splints are made from thick rubber sheeting, and can be cut to any size desired. They are used for support to the fractured septum. Dr. Brown maintains that the splints prevent granulations. The splint can be grooved to fit any irregularity on the septum or turbinate. The splints should not be perforated.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Eye-Symptoms of Akromegaly. Leszynsky (*Phila. Med. Jour.*, Oct. 7, 1899) discusses this subject and reports a representative case. It is well known that a variety of eye-symptoms may occur as an accompaniment of akromegaly, but the most important are those due to involvement of the optic nerves. Vision is impaired in many cases. The symptoms are usually early and take a progressive course. In some cases they appear among the later manifestations of the disease. Bi-temporal or one-sided temporal hemianopsia for form and color is frequently observed. This is due to an overgrowth or neoplasm involving the hypophysis which presses on the chiasm, and also to bony changes in the optic foramina. In this manner the arterial supply of the nerve and eyeball is also disturbed. But the usual cause is unquestionably an enlargement of the hypophysis. This enlargement, making prolonged and gradual pressure, produces slow degeneration of the optic nerve-fibers, until ultimately the atrophy of the nerves becomes complete. Homonymous hemianopsia occasionally occurs from the growth pressing upon one optic tract. At almost every autopsy in which a hypophysis tumor has been revealed in akromegaly, the optic nerves have been found flattened mostly in the region of the chiasm. The microscopic examination shows a pronounced degeneration of the nerves, especially that portion in direct contact with the tumor. On the other hand, hypophysis enlargements, whether benign or malignant, may produce optic-nerve disease, without at any time presenting a hemianopic field. In these cases, at times, there is pronounced involvement of only one eye, clinically a simple optic atrophy. Again, there are cases which run a course with papillitis, and these are most frequently tumor of the hypophysis, usually sarcoma. They may also terminate in complete blindness through consecutive atrophy. The changes in the pupillary reaction are those which are usually associated with lesions affecting the anterior (necortical) portion of the optic tract, producing hemianopsia. The Wernicke reaction is often demonstrable, and was present in the patient shown. Among other eye-symptoms that occur in this affection are: Exophthalmos, probably from proliferation of adipose tissue back of the bulb, and oculomotor paralysis from pressure on the third nerve nucleus. Leszynsky believes that in those cases accompanied by ocular dis-

turbances as above mentioned, and their association with persistent headache, anosmia, paresthesia in the extremities and impotence, that an early diagnosis might probably be made before the characteristic enlargement of the extremities becomes pronounced. It remains an open question, however, whether or not the eye-symptoms and the enlarged extremities develop progressively at about the same time.

The Absorption of Uncomplicated Immature Cataract by Conjoined Manipulation and Instillation. Kalish (*Med. News*, Oct. 14, 1894) reiterates his belief in his method, first published nine years ago, and notwithstanding lack of support and adverse criticism, he forcibly protests that it will often produce a permanent result, although he admits that some cases will not be modified. In a series of 118 eyes he reports 69 successful results, and states that the percentage in his recent cases is still higher. He excludes cases of complicated cataract; that is, those accompanied by diabetes, nephritis, choroiditis, retinitis, keratitis, or other serious systemic or local pathologic changes. He is unable to say at present whether or not arthritis is a serious complication. An error of refraction is an accompaniment but by no means a complication. His conclusions are as follows: (1) Immature cataract is due to local conditions dependent on general systemic causes. (2) Senility is rarely a direct, but may be a predisposing, cause. (3) Fluids containing perverted aliment resulting from defective metabolism supplied to the lens through its nutritive stream may be considered an exciting cause. (4) Deficient blood-supply, thus reducing the quantity furnished, may be considered a contributing cause.

The following conclusions may be drawn: (1) Immature cataract may be regarded as a largely preventable disease. (2) It may, by properly directed treatment, local and constitutional, be prevented, arrested, retarded or cured. (3) The circulation of the blood must be regulated. (4) The faulty digestion must be rectified. (5) Constant supervision of the eye must be maintained by a competent ophthalmologist, that eye strain be relieved, and all changes in refraction be promptly remedied. (6) Treatment by conjoined manipulation and instillation should be instituted at the earliest possible moment. (7) Finally, if local and constitutional treatment should not provoke a favorable issue, they will establish a more nearly normal state of the ocular tissues, and if an operation be found necessary, this improved condition of the ocular structures will ensure a larger degree of success.

The paper is accompanied by a plate of illustrations of many different types. His selection of cases was made solely to present a pictorial representation of lenticular opacities before and after treatment, and the ones chosen were those in which there was the longest interval between the first and the latest examination, the object being to demonstrate that progress of the cataract was arrested and the absorption of the opacity was permanent. (The method of manipulation or massage, the composition of the fluid instilled (5% glycerin), etc., are given in full in Kalish's first paper.—*Med. Rec.*, 1890, XXXVII., 341.)

Traumatic Expulsion of Both Crystalline Lenses in Consecutive Accidents. Thilliez (*Jour. des Sci. méd. de Lille*, Sept. 23, 1899) reports a case of this nature in a woman, who had received a penetrating wound of the anterior right eyeball by a cow horn, and some months later was struck in the left eyeball by an iron bar. At the time of examination the scar in the right cornea and sclera was plainly visible. There were no signs of the lens, but the pupil was occupied by opaque capsule, showing that the lens had been expelled from its capsule. Light perception and projection were good. The cicatrix was plainly visible in the left eye, but there were no signs of either lens or capsule. The pupil was black and the iris was freely movable. Vision with +S. 8.00 D = $\frac{1}{4}$. In this case undoubtedly the traumatism had caused expulsion of the lens in its capsule, leaving the pupil entirely free.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Syphilitic Cutaneous Scars. Ohmann-Dumesnil (*Med. Rev.*, July 1, 1899) notes that syphilitic scars are the result of either superficial or deep destructive lesions. The chancre being a simple, round-cell infiltration, should, if properly treated, leave no scar. Where there is no reckless cauterization of the sore, there is no resultant scar. The scars of superficial cutaneous syphilides are characterized, first, by a peculiar dark bronze pigmentation, sharply defined against the unaffected skin. In the course of time this color gradually fades away, this bleaching process always beginning in the centre of the pigmented area. Later on another marked characteristic of syphilitic scars is shown, as a result of this continued bleaching, in an entire loss of the natural pigment of the skin, so much so that the scar becomes a dead white in color and very glistening. In deep destructive lesions of the skin the resultant scar is crater shaped and somewhat stellate in appearance. They are, moreover, inclined to be hypertrophic in character and present a very unsightly appearance. Where ulcerative lesions occur upon the scalp and over subcutaneous bones, the scar is apt to be considerably depressed and firmly adherent to the bone.

The Neglect of Sexual Symptoms in the Treatment of the Male Genito-Urinary Organs. Cabot (*N. Y. Med. Rec.*, Sept. 30, 1899) makes a plea for a more scientific study of the sexual organs in health and disease than has been accorded them up to present time. He states that this great want of knowledge in regard to sexual life is due to, first, the lack of instruction given to growing boys and girls, with reference to sexual hygiene. In this connection, he refers to the air of mystery that is continually thrown about this subject by the parents of children. The second reason given is the lack of teaching in the medical schools on the subject of the sexual function and its relation to health and disease. Several cases of gonorrhea with vague, indefinite symptoms of sexual neurasthenia are cited as showing the importance of this subject. Among the conclusions drawn by the author are: (1) Sexual symptoms in genito-urinary practice should be carefully investigated, and thoroughly studied. (2) Various forms of remote nervous symptoms are directly traceable to disorders of the sexual organs.

Division of a Ureter with Successful End-to-End Suture of the Same, in a Case of Horse-shoe Kidney. Allen and Briggs (*Boston Med. and Surg. Jour.*, Oct. 5, 1899) reports the case of a woman aged 33, single, who at the age of 13 noticed a lump on the right iliac region, hard and immovable. At the age of 28 laparotomy was performed, and a tumor of the right ovary was said to have been removed. Upon admission to hospital, January, 1899, patient still presented painful tumor in right iliac region and was also suffering with painful and frequent micturition. On operating, a tumor was seen resting upon the brim of pelvis on the right side, which was found upon section to be a kidney surrounded by perirenal fat. Further examination showed the absence of a kidney upon the left side. Two ureters led into the tumor, which was decided to be a horse-shoe kidney. Early in the operation the ureter on the left side was divided. Being unwilling to trust to the right ureter to drain both kidneys, the writers resorted to end-to-end suture in the case of divided ureter. A glass drainage tube was carried through an opening in the vaginal vault, into the pelvis, to facilitate drainage and allow the escape of any urine which might leak from the ureter. There was for a few days some little discharge of urine per vaginam. The patient made a complete recovery.

An International Conference for the Prevention of Syphilis and the Venereal Diseases. (*Gaz. des Hop.*, Sept. 19, 1899.) At this conference, held in Brussels September 5, 1899, six questions were propounded and discussed: (1) Have the systems of actual regulation of prostitution any influence upon the dissemination of syphilis and the venereal diseases. In the discussion of this question, the point was made by Fournier that the young girl was always in the greatest danger, the age when infection is most likely to occur being eighteen. Three methods of protection are suggested: Moral education, coercive measures, and treatment of diseased conditions. (2) Is the actual medical surveillance

of prostitution capable of betterment? In answer to this question, Finger gives three methods: (a) A medical surveillance of persons susceptible to giving infection; (b) obligatory treatment of syphilitics; (c) isolation of those affected with venereal disease. (3) From an exclusively medical point of view, is it better to maintain houses of prostitution, or would it be better to suppress them? From the discussion upon the second and third questions, it appeared to be the general opinion that houses of prostitution should be maintained under medical supervision, the medical examinations being made frequently and thoroughly, the women being completely undressed. (4) Is police surveillance of prostitution susceptible of betterment? In this connection it was considered impossible to form uniform laws capable of being applied to every nation. Every country, in the face of prostitution, ought to adopt a uniform legislation, in the interests of public health. (5) By what legal measures may we diminish the number of women who seek a livelihood in prostitution? The law of supply and demand answers this question. As long as there is a demand on the part of men for the company of prostitutes, so long will prostitution exist. (6) What general measures might be taken to efficiently combat the propagation of syphilis and other venereal diseases? Kaposi, in answer to this question, gives (a) that in all medical colleges regular lectures and clinics should be given on syphilis and venereal diseases and that these branches should be considered as of equal importance with medicine and surgery; (b) examinations in these subjects should be obligatory.

Spinal Complications of Gonorrhea. Kalendern (*Klin.-Ther. Woch.*, Sept. 7, 1899) maintains that spinal complications in the course of gonorrhea are analogous to gonorrheal arthritis, endocarditis, etc., and are due to secretions or toxins elaborated by the gonococci; produces a lumbar meningomyelitis or a lumbar poliomyelitis; in the latter case, with resulting changes in the nerves of the lower extremities, and consequent muscular atrophy.

GYNECOLOGY.

UNDER THE CHARGE OF

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Celluloid-thread According to San-Rath Dr. Pagenstecher. Schlutius (*Centralblatt für Gynäk.*, Sept. 23), after referring to the frequency of stitch abscesses and septic infection from the ordinary suture material, expresses the need of a non-absorbing material for surgical use, and

thinks this need has been met by Pagenstecher's celluloid-thread. He first saw this used in the city hospital of Elberfeld about 2 years since. An attempt to prepare such a thread had been made many years before by Linhart, and later by Trendelenberg and Lawson Tait; but it was left for Pagenstecher to complete the task. This material, at first prepared only in the hospital under the supervision of the hospital physician, is now made in large quantities as follows: The best English gray linen thread is boiled in a 1% soda solution and thoroughly sterilized, then packed in sterile cloth and dried in a stream of hot air. It is then saturated in a specially prepared solution of celluloid, rendering it smooth and glossy, and after being heated in large disinfectors, it is packed in sterilized pasteboard boxes ready for sale and use. Schlutius describes this thread as firm and inflexible, and without that elasticity which causes the slipping and loosening of the knot. It is very easily threaded and tied, and is best for use in deep cavities as, because of its smooth, glossy surface, it never absorbs any secretion from the wound, and he has never observed any stitch abscesses or infection of any kind from its use. It is made in five sizes, rendering it suitable for all kinds of operations. It can be used in a finer size than silk, and hence is especially desirable for the most delicate operations, while the coarsest, No. 5, is the best for ligatures *en masse*. From the very favorable results following the use of this celluloid-thread in his own experience, as well as that of Pagenstecher, Schlutius believes that it will eventually supersede all other suture materials, being less expensive and better adapted to the general needs of the surgeon.

Disorders of the Menopause. Cushing (*Annals of Gynecol. and Pediat.*, July, 1899), in a valuable discussion of the menopause, lays down certain axioms which must be the guide of the modern practitioner, and through him of a laity better enlightened than in previous times. These rules are: (1) All irregular or profuse hemorrhages about the period of the change of life are suspicious; they, therefore, require immediate, thorough and competent examination. (2) All cases of incipient cancer of the uterus are easily diagnosticated by competent examiners, by the aid of the curet and microscope in doubtful cases, but usually by the presence and character of an ulcer. (3) All cases of cancer of the uterus in the early stages are susceptible of complete removal by total hysterectomy, with less than 2% of mortality in competent hands. There is, in fact, no organ of the body where cancer can be so totally and widely removed as in cancer of the uterus. (4) A large proportion, probably a large majority, of cases where total extirpation of the uterus for cancer is performed early, quite early, never have any relapse or recurrence in the scar or elsewhere. They are saved, and they enjoy not only life but the best of health.

Upon the Condition of the Uterus after the Extirpation of both Ovaries, and after their Transplantation to Another Place in the Abdominal Cavity. Rubenstein (*St. Petersburger Med. Woch.*, July 31, 1899) inquires into the cause of atrophy of the uterus after castra-

tion, and quotes the opinion of many writers on this subject. L. Tait believed there was present in the tube a center which influenced the nutrition of the uterus. Martin and Schroeder ascribe the uterine atrophy to the ligation of the spermatic artery; others, of the uterine artery; but both have been ligated and the uterus remained normal. Sokolow attributes the atrophy of the uterus to the injury of the nerves which control uterine nutrition; but Rhein, in his experimental studies, destroyed uterine, sacral, and sympathetic nerves and no atrophy occurred, and pregnancy completed its normal course. Rubenstein made experiments upon a dozen rabbits, leaving the ovary free in the abdominal cavity or suturing it to the peritoneum, and he found that whenever the transplanted ovary grew and functionated, no atrophy of the uterus occurred; but if the ovary itself was absorbed or in the least atrophied, the uterus showed atrophy of the muscles and mucous membrane, thickening of the vessels, and proliferation of the connective tissue in the uterine walls. The researches of Curatolo and Tarulli show that the assimilation of castrated animals is quite different from others, and there is a tendency to fat which is often utilized. There is also a diseased assimilation, osteomalacia, which can only be cured by castration. Rubenstein from his studies concluded that for the retention of a normal uterus, it is only important that the ovaries should not be removed from the organism, and should retain their vitality and activity, though not in their natural position; for in his experiments there were repeated pregnancies after the transplanting of the ovaries. It is, therefore, evident that the ovaries, beside their sexual function, possess another until recently unknown function, the power of producing a peculiar internal secretion which affects the whole organism.

Tumors of Gigantic Size. W. Roger Williams, F.R.C.S., Eng. (*Lancet*, Sept. 23), believing that great interest attaches to the study of the unusual and extraordinary, notices briefly some of the largest tumors known. When the minuteness of the germs whence these big tumors arise is considered, and the high degree of organization they attain, it seems not unreasonable to regard the force which originates them as analogous to that which determines the development *ab ovo*. It accords with this that the largest tumors almost invariably spring from those parts of the body whose post-embryonic developmental changes are most active—such as the uterus, the ovaries, and the mammae. Tumors of this kind are nearly always of slow growth and of the non-malignant variety. To the uterus belongs the distinction of having produced the largest tumor on record, the weight of this gigantic formation being 195 lbs. It was a cystic myoma, the cystic part containing 17½ lbs. of coffee-ground sediment. The abdominal distension was enormous, the patient measuring 6 ft. at the level of the umbilicus. The subcutaneous veins were very prominent and the skin over its lower part was edematous and corroded. The patient was under the care of Severanu, of Bucharest, who removed the tumor by laparotomy. Several instances of myomatous tumors weighing over 100 lbs. have been recorded. Dr. Elizabeth Reifsnyder, of Shanghai, has described the largest ovarian

tumor extant. This colossal growth, which weighed 169 lbs., was removed from a small Chinese woman, aged 25 years, who, without the tumor, weighed only 77 lbs. Her height was only 4 ft. 8 in., but around the abdomen she measured 5 ft. 9 in. The tumor reached to her knees and made walking almost impossible. The lower limbs, back, and the lower part of the abdominal wall were edematous, and both legs were ulcerated. During the removal of the tumor by laparotomy it was found to be extensively adherent to the abdominal wall. It consisted of one very large cyst, which contained 88 quarts of brownish fluid and a small cyst. The empty sac weighed 6½ lbs. It had a long pedicle which was about 2½ in. in thickness. The patient made a good recovery. Others are reported weighing from 100 to 150 lbs. Ovarian dermoids, as a rule, do not attain a very large size, but Skene Keith reports having successfully removed a tumor of this kind weighing over 100 lbs. Among the largest mammary tumors must be reckoned those which result from that mysterious disease called "diffuse hypertrophy." In an instance of this kind reported by Durston, in which both breasts were involved, the left weighed 64 lbs. and the right 40 lbs. The person affected was a short, fair-complexioned woman, nearly 24 years of age. She died from exhaustion about 4 months after the onset of the disease. On examination of the enlarged organs after death it was found that they resembled the normal mammae, from which they differed only in their great size.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

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A New Method of Expelling the Placenta. Budberg (*Centralblatt für Gynak.*, July 29, 1899) modifies Credé's method of expelling the placenta as follows: Relaxation of the abdominal muscles should first be secured by distracting the patient's attention. The hand of the accoucher sinks into the abdominal wall gradually deeper and deeper until it is possible to grasp the fundus well posteriorly with the finger behind and the thumb in front. The lower half of the uterus is then seized with the other hand, the edge of the little finger lying parallel with the symphysis. The hands should be pressed together with gradually increasing force, commencing with a pain and continuing until it ceases. As the pain subsides, the pressure should gradually lessen in force and not suddenly stop. The author claims for this method that it does not move the uterus out of its normal

position, but fixes it, so that there is no danger of stretching the ligaments and supports of the uterus. Inversion of the uterus is impossible by this method. The bladder is emptied at the same time as the uterus by the compression.

The Operative Treatment of Labor Complicated by Pelvic Deformities. Dobbin (*Obstetrics*, I., No. 8, p. 417), after fully discussing his subject, arrives at the following conclusions: (1) In 131 cases of contracted pelvis there was necessity for operative delivery 46 times, or 35.11 %. (2) The pelves most frequently requiring operation are the rachitic and irregular forms. The generally contracted pelvis, though very common in the negro race, is comparatively rarely sufficiently deformed to seriously obstruct labor. (3) Pelves in which the degree of contraction is slight, and those in which the contraction is very marked, are the easiest for treatment, as in both cases the indications are definite, and should give the operator little trouble in deciding upon the treatment to be pursued. (4) On the other hand, the pelves possessing a medium degree of contraction are the most perplexing and call for the exercise of the greatest skill and judgment. When proper appliances are at hand, such cases are best treated by tentative application of forceps, and, this failing, immediate Caesarian section. (5) In general, forceps give a lower fetal mortality than version; but version done as a primary operation on a movable head, in a slightly contracted pelvis, is a safer operation for the child than a difficult high forceps operation. (6) Except in very exceptional cases, symphysiotomy is not to be compared with Caesarian section, for the former operation, besides causing greater injury to the mother, is always an uncertain procedure. (7) Operations on contracted pelves are rarely uncomplicated. Among the commonest accidents may be mentioned premature rupture of the membranes and prolapse of the umbilical cord. (8) The only rational and scientific method of obtaining "corrected morbidity" statistics is by the bacteriological examination of the uterine lochia, for only in this way can we say definitely which infections are the result of operation.

Indications and Contraindications for Hysterectomy in Puerperal Infection. Tuffier and Bonamy (*Revue de Gynecol.*, July-Aug., 1899) give the following as indications for hysterectomy in puerperal infection: (1) Total retention of the placenta, when neither finger nor curet is able to detach the adherent organ from the uterine wall. Three cases in which life was saved, illustrating this, were reported by Wintrebret in 1895. (2) When the indications for Caesarian section and sepsis coexist. (3) In ordinary cases of sepsis, where the usual treatment produces no improvement in prognosis. According to Doleris, hysterectomy is indicated, if, after a curettage the temperature rises, instead of progressively falling. Precious time may be lost by doing a second curettage. We have the pulse, respiration, facial expression, tongue, and chills, as well as the temperature, to aid us in deciding whether the ordinary methods of treatment are proving effective. The contraindications for the operation are as follows: (1)

It must be ascertained whether the sepsis has arisen from the uterus alone, and not elsewhere. (2) Hysterectomy can do no good in acute septicemia, or pyemia, when the microbes have entered the circulation, as shown by the presence of the streptococcus in the blood. (3) In cases where the blood contains no micro-organisms, the patient may be so near a fatal termination as is shown by vomiting, etc., that operative interference would be of no avail. (4) General peritonitis is always a contraindication, unless it is post-operative, in which case removal of the uterus with the opening and draining of the peritoneal cavity may save life in some cases.

Prolonged Pregnancy. McFarlane (*Glasgow Med. Jour.*, Sept., 1899) reports a case in which the last menstruation occurred on April 29, 1897, and the labor did not occur until March 29, 1898. Life was first felt in September, 1897, and continued thereafter. The fetus was an anencephalus. The mother did not feel alarmed when term arrived without the labor setting in, as the fetal movements were very active. During the last six weeks she suffered greatly from dyspnea and pain. The patient became pregnant during the following year and went ten days beyond her expected time.

Caesarian Section, or Symphysiotomy. Fancourt Barnes (*Ann. of Gyn. and Ped.*, Aug., 1899) writes that he believes that the operation of symphysiotomy has not justified its existence and that those who now advocate it will abandon it. Caesarian section is scientific and justifiable and will be more widely resorted to as the art of obstetrics progresses. Induction of premature labor will always hold a recognized and useful position among obstetrical operations in preference to symphysiotomy.

he Removal of Gouty Tophi by Injections of Piperazin. This remedy was used by Gioletti in a case of gout, and the results reported in the *Gazetta degli Ospedalia*, August 20, 1899. The case had improved under internal treatment with the same drug, but the uratic deposit around the tendon-sheath of the peroneus longus did not disappear, and, therefore, Gioletti decided to use hypodermic injections; accordingly, $\frac{1}{8}$ of a grain, dissolved in 8 drops of distilled water, was thrown into the deposit. The patient complained of a burning pain following the injection, but that was obviated in the subsequent treatments by having the part sprayed with ether. The absorption of the tophus was completely effected by 10 injections, and the author believes that gouty joints might be treated in this manner successfully, under strict antiseptic precautions.

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Milk is so important an article of diet for both infants and adult invalids that we need to have exact and accurate information concerning its digestibility under various conditions. Considering its great liability to infection and its rapid fermentation, in warm weather especially, it is very desirable that it should be sterilized by heat (the only safe method) when it comes from the dealer; or, at least, before it is consumed. It is, therefore, very reassuring to learn that an Italian investigator, Prof. Jemma, has lately demonstrated that milk is not injured by heat.

The Digestibility of Sterilized Milk.

Jemma (*La Clin. Med. Ital.*, 1899, No. 6; and *Gaz. des Hop.*, No. 110) has shown by a series of experiments with various digestants that sterilized milk is quite as nutritious and digestible as raw milk, which is contrary to an opinion widely prevalent. He proved that while under the action of pepsin and hydrochloric acid alone unchanged milk digests a little more quickly than the sterilized, with pancreatin the results were exactly reversed, the sterilized showing a much more rapid digestion. Employing a combination of rennin, pepsin and hydrochloric acid, the condition presented by a normal gastric juice, the digestion in the first hour was more rapid in the case of the sterilized than in that of raw milk, and after the prolonged action of these digestants there was a considerably larger amount of peptones in the case of the former. Sterilized milk subjected to the action of a combination of rennin and pancreatin was digested much more rapidly than the unmodified article. Finally, the successive action of these various ferments, as in natural digestion, was more favorable with sterilized than with unchanged milk. Jemma concludes, as a result of his investigations in this very important field, (1) that milk in being sterilized by heat loses none of its digestible qualities, but the latter are rather increased thereby, and (2) that diluting sterilized milk with water in the proportion of 10 to 100, further enhances its digestibility.

Right here it is in place to say that milk can be sufficiently peptonized by adding a good preparation of pancreatin without soda, which is generally an unnecessary, and often a harmful addition, since recent experiments by Rachford have shown that a one per cent. solution of carbonate of sodium impairs and may almost destroy pancreatic digestion. Moreover, the prolonged use of soda or any alkali, especially in neurasthenics and always when there is a deficiency of HCl secretion in the stomach, tends to injure gastric digestion, lower the nerve tone and decidedly impair the health.

This is an important point, since the peptonizing process most frequently employed in this country involves the use of tubes containing a considerable dose of soda as well as of an extract of pancreas for each pint of milk.

An octogenarian was recently heard to remark that if he were a physician he would search the world over but that he would find a remedy for chronic rheumatism. This gentleman has fared well during his long life, and still claims that he is able to "eat everything." But his eighty-one years and indulgence in a taste for the good things, including plenty of sugar, have finally developed such a vice of nutrition that even full doses of the salicylates afford temporary alleviation only of his rheumatoid pains. He is unable, or unwilling, at his time of life, to submit to any deprivations in his diet, and probably the degenerative changes that have taken place in his tissues would render nugatory even the most careful regimen. But his idea that there must exist somewhere a never-failing remedy for every ill is one that is very widespread among the laity.

**The Layman's Idea
of a Cure for
Every Ill.**

Physicians are often asked by their patients why there cannot be found sure cures not only for chronic rheumatism but also for constipation, chronic intestinal catarrh, neurasthenia, and other obstinate maladies which signify more or less serious faults in the processes of tissue metabolism. When such diseases come on in early life, they are amenable to treatment, usually by having the patient turn about and patiently retrace the steps he has wrongly taken. If he has overworked with body or brain, and at the same time been underfed, he must change his habits, give himself more time for rest, recreation, and sleep, and pay more heed to the wants of the inner man. If, as is more frequently the case, he has eaten excessively as well as irregularly, and taken little or no exercise, he must promptly correct these disastrous hygienic faults, and then, with the proper attention by his physician to the vitiated secretions which always result in such cases, there will be hope of his gradually and slowly restoring the lost balance in the nutritive process.

This class of affections, even in middle life, if not in old age, may often be cured by forswearing the habits that produced them, and a patient persistence in right living, with a judicious course of medicinal and mechanical treatment, based upon an intelligent study of the secretions and excretions, and long persevered in.

But the laity needs to be taught that there are very few specifics in medicine in the sense that quinin in sufficient doses is an almost certain remedy for true malaria, and that mercury and the iodides are for syphilis. When the pathologic organisms have been introduced into the body from without, as in the case of the two familiar diseases above mentioned, and of the exanthemata, there is reason for expecting to find medicines that possess the power of effectually supplementing, when necessary, the work of the de-

fensive cells and fluids in destroying the invaders. In the case, however, of tuberculosis, which belongs to this class, the search has not yet been successful, and sunshine and an abundance of pure air have proved thus far the most effectual remedies. When the morbid agents are produced within the body as a result of sluggish excretions and perverted secretions, hygienic measures must probably always hold the first place in the work of restoring the health, while drug remedies, including even germicides and antiseptics, need to be used with a more sparing and cautious hand.

EDITORIAL MENTION.

CONCERNING the amenability of consumption to climatic treatment, Fisk, in a recent paper on the climate of Colorado, quotes Solly as authority for the statement that 50 per cent. of all cases treated in low climates and 76 per cent. of those treated in high altitudes are improved. It is further claimed by Solly (who is high authority in climatology), that 89 per cent. of patients going to Colorado in the first stage of pulmonary tuberculosis are benefited. It is quite time the laity were taught that consumption is not necessarily the inevitably fatal disease it was formerly considered.

DOCTORS De Forest Willard and S. M. Wilson, in a paper recently read before the Philadelphia College of Physicians, reported the case of a lady who lived to the age of seventy-four, in spite of having had an ovarian multilocular cystic tumor for thirty-five years. Her tumor dated from the time when Dr. Washington Atlee and a few other bold innovators were the only surgeons who ventured to operate in such cases, and for so doing were denounced and in a measure ostracized by many leading men in the profession in consequence. Even the elder Pancoast and Gross did not then approve of the operation. Dr. Willard's patient was frequently tapped, having declined the radical operation, and was not killed finally by the tumor, but succumbed to influenza.

DR. WHARTON SINKLER delivered before the American Neurological Association, at its last annual meeting, a very interesting and gracefully written address commemorative of the achievements of that body during its twenty-five years of existence. From this address, it seems that the Neurological was the third national association of medical specialists to be formed in this country, there having been previously organized the American Ophthalmological, in 1864, and the American Otological Association, in 1868. It grew out of a call issued December 15, 1874, and its first meeting was held in New York in June, 1875. The call was signed by William A. Hammond, Roberts Bartholow, Meredith Clymer, J. S. Jewett, E. C. Seguin, J. J. Putnam, and T. B. Cross. There were thirty-five original members. Dr. S. Weir Mitchell was elected the first president, but declined, since he was unable to be present at the meeting, and Dr. Jewell was unanimously elected instead.

INDEX

TO

INTERNATIONAL MEDICAL MAGAZINE,

Volume VIII.

1899.

A.

- Abdominal section, cases of, 64.
 sacral method for the removal of
 rectal carcinoma, 702.
 cavity multiple, echinococcus of, 55.
 operations, secondary, 84.
 operations, saline irrigation in, 710.
- Abdomen in deficient lacteal secretion,
 massage of, 790.
- Abnormal stomachs, diagnosis of, 230.
- Abortion by means of nitrate of silver, 296.
 advertisement not recoverable pay-
 ment for, 565.
- Abscess of the larynx, 938.
 peritonsillar, operative treatment for,
 620.
- Absorption of uncomplicated immature cat-
 aract by conjoined manipulation and in-
 stillation, 941.
- Acetanalid poisoning, 210.
- Acne, the use of ichthyol in, 122.
- Acnitis, 915.
- Act, Illinois medical practice, 682.
- Action of carmine upon toxins, 931.
 of the digestive juices upon toxins,
 931.
- Actinomycosis, cervico-facial, 447.
 in dry pus, demonstration of, 698.
- Acute leukemia, nature of, 849.
 articular rheumatism, importance
 of salicylic acid over the salicylates
 in the treatment of, 774.
 arsenical poisoning, a case of, 43.
 gastritis, treatment of, 272.
 gastrointestinal catarrh in infants,
 diet in, 477.
 diffuse gonococcus peritonitis, 546.
 gonorrhoea; its prevention and cure,
 868.
 pemphigus, a case of, 608.
 poliomyelitis, contravention to the
 study of, 530.
- Adenoid vegetations, from the fossae of
 Rosenmuller, on the importance of
 removing, 380.
 tumors of the nasopharynx, 938.
 vegetation, hemorrhage following re-
 moval of, 542.
- Addison's disease in children, with report of
 a case of, 373.
- Adherent placenta, 550.
- Advertisers in the role of editors, 874.
- After effect of surgical procedure on the ge-
 nerative organs of females for insanity, 64.
- Agglutination of the red blood corpuscles;
 causes of, 697.
- Akromegaly, eye symptoms of, 940.
- Albuminuric retinitis, 786.
- Albuminous urine, an improved method for
 finding peptones in, 240.
- Albuminin in the urine, with remarks on the
 best tests. A fallacious test for, 289.
 acetosoluble in urine, 531.
- Alcohol in the sterilization of the umbilical
 stump, 871.
 from the animal organism, rapidity
 of the illumination of, 360.
- Alopecia areata in an asylum for girls, two
 epidemics of, 927.
 prematura, etiology of, 292.
 areata, a new agent for the treatment
 of, 533.
- Altitude, recent inquiries concerning the
 blood changes induced by, 481.
- American Climatological Association, 319.
 Climatological Association, 479.
 Year Book of Medicine and Surgery,
 394.
 Medical Editors' Association, 548.
 Medico Psychological Association, the
 55th meeting of, 467.
 Medical Association, 319.
 Medical Association, meeting of, 637.
 Electro Therapeutic Association, 584.
- Aniline and malignant disease, 194.
- Anachlorhydria in ulcer of the stomach, 602.
- Anastomosis of the intestines, end to end,
 139.
- Anatomically unaltered kidneys, hemorrhages
 from, 45.
- Anatomical specimens; a new method of pre-
 paring, 776.
- Anesthesia, Schleich's mixture for, 374.
 washing out the stomach after, 131.
 Schleich's mixture for, 375.
- Anesthetic, the choice of, 227.
- Anders, J. M., gall-stone crepitus and fric-
 tion, illustrated cases of, 881.
- Anencephalus, a case of, 112.
- Aneurism of the abdominal aorta, successful
 treatment of, 556.
 of the coronary artery, a report of two
 cases, 762.
 of the femoral artery in a child, a case
 of, 55.
 the gelatin treatment of, 600.

- Announcement, 68.
- Antidiphtheritic serum when introduced into the stomach or rectum, the causes of the inactivity of, 932.
- Antepartum and postpartum vaginal douches, 871.
- Antisepsis and improved technique for actual results of operative gynecology, on the value of, 870.
- Antistreptococcic serum in erysipelas, 861.
- Antivivisection humbug, 71.
- Antivaccination movement, 306.
- Antitoxin in diphtheria, 375.
a case of tetanus treated with, 450.
tetanus, clinical and experimental, 535.
treatment of tetanus by means of intracerebral injections of, 443.
cases treated with, diphtheritic paralysis in, 780.
prophylactic power of, 231.
- Antistreptococcus serum in the treatment of primary venereal sores and their complications, 63.
- Antistreptococcic serum in epidemic cerebrospinal meningitis, 605.
- Anticipated suggestion, 156.
- Aortic insufficiency, the origin of venous congestion in cases of complete compensation of, 585.
- Appearance of the typhoid bacillus in the urine, 524.
- Appendicitis, the treatment of, 541.
in children, 294.
deceptive standstill in, 764.
treatment of, 282.
histology of the varieties of, 56.
the importance of rectal examinations in doubtful cases of, 218.
hernia following operations for, 702.
treatment of, 378.
medical treatment of, 228.
- Appendiceal abscess during an examination. Immediate laparotomy; recovery, rupture of, 300.
pus, complications and sequelae resulting from, 782.
- Aphasia, a contribution to the study of, 531.
- Applications, local, ice or cold as, 450.
- Application of heat to uterine cancer, 147.
- Argyria of the skin and mucous membrane following repeated cauterization of the oropharynx with nitrate of silver, a case of, 621.
a case of, 50.
- Arterial contraction and obliteration a chief cause of the muscular atrophy connected with tuberculous joint disease, 781.
- Arterio-mesenterial obstruction of bowel at the duodeno-jejunal junction and its causal relation to dilatation of the stomach, 849.
- Arthritis gonorrhoeal, 223.
deformans of the hip, a case of, 571.
- Artificial abortion, with treatment of 60 cases, the importance of, 67.
- Ascending neuritis, contribution to the study of, 202.
- Asepsis, on some important points regarding the perfection of, 937.
- Asparagus as a diuretic, a preliminary note on the use of, 929.
- Asthma, relation of pathologic conditions of the ethmoid region of the nose to, 939.
paraldehyd in, 451.
- Atheroma, treatment of, 389.
- Athletics upon the heart and circulation, the immediate remote effects of, 921.
- Auto-intoxication, 602.
- Autopsy; and report of lupus erythematosus in a tubercular subject, 533.
- Ayers, Edward A., present day requirements in the management of pregnant women, 511.
- B.
- Babcock, W. Wayne, laboratory methods of diagnosing tuberculosis. The staining of sputum, 901.
bacteriology, its practical value to the general practitioner, 658.
high amputation of the cervix and vaginal suture as preliminary to abdominal hysterectomy, with the report of a case, 738.
- Bacillus icteroides confirmed, 709.
leprae, the cultivation of, 831.
of tuberculosis, 39.
pyocyaneus infection, with a report of a case, 53.
- Bacteriological and pathological laboratory in Delaware, 478.
- Bacteria of pneumonia in children, 128.
- Bad-Nauheim; its springs and their uses, 796.
- Band's ring, dystocia from contraction of, 466.
- Benedict, A. L., typhilitis—a medical study, 167.
- Benjamin Dowling, preparation needed for a case of labor, 106.
- Bicornate uterus mistaken for ectopic gestation, a case of, 151.
- Bile pigment, formation as a test for, 34.
- Black tongue, 691.
- Bladder, diverticulum of, 545.
- Blakiston's physician's visiting list for 1899, 73.
- Blepharitis, protargol in the treatment of, 210.
the use of formalin in the treatment of, 61.
- Book reviews, 73, 74, 76, 158, 159, 234, 235, 236, 237, 238, 318, 394, 395, 396, 473, 475, 476, 557, 558, 559, 630, 631, 632, 633, 634, 635, 718, 719, 796, 797, 877, 878, 879, 880.
- Bottini's galvano caustic treatment of prostatic hypertrophy. A preliminary report of three cases, 63.
- Bovine tuberculosis and human tuberculosis, relations existing between, 214.
- Bradford, E. H., correction in lateral curvature, 842.
- Brain, localization and removal of a bullet from, 302.
tumor at the base of the left second frontal convolution, a case of, 530.
- Bromid in the urine, a simple method of determining the presence of, 462.
of strontium in the treatment of epilepsy, further notes on, 211.
of strontium in epilepsy, 35.
of ethyl in gynecology and obstetrics, 624.

Bronchial asthma, the treatment of, 398.
 Bronchitis and pneumonia, guaiacol carbonate and creasote carbonate in, 909.
 Bronchiectasis, ulcerative bronchopneumonia, or honeycombed lung, 920.

C.

Caesarian section or symphysiotomy, 949.
 Caffein in cardiac and renal disease, the application of, 612.
 Calculus of the uvula, a case of, 219.
 from the common duct two inches long and three and one half inches in circumference without entering the duct; removal of, 217.
 Calomel injections, the use of orthoform in, 379.
 Cancer, 452.
 lymph-gland juice in the treatment of, 56.
 of the stomach, concerning the influence of sex in the transmission of, 286.
 of the ear, with solutions of arsenic and alcohol, treatment of, 51.
 and consumption, relative death rates from, 779.
 and tuberculosis of the cecum, on the diagnosis of, 922.
 of neck and bifid uterus, 226.
 of the common bile duct, 852.
 of the digestive organs, on the diagnosis of, 603.
 Cancerous affections, vegetable parasite in, 699.
 Carbolic acid gangrene, 858.
 Carbuncle, treatment of, 205.
 Carcinoma under the age of thirty, 936.
 uteri, and the methods by which it is attained; the importance of the early recognition of, 897.
 and simple ulcer, gastric surgery in, 39.
 Cardiac and renal disease, the application of caffeine in, 612.
 Care and repair of the female perineum, 383.
 Carmine upon toxins, the action of, 931.
 Case of empyema of the ethmoid cells, 939.
 of movable third kidney, 338.
 of general infection by the diplococcus intracellularis of Weichselbaum, 52.
 of intermittent hydronephrosis in a child successfully treated by operation, 607.
 of narcolepsy, 766.
 Cases of phthisis with peculiar cardiac physical signs, a note on, 164.
 Castration and resection of the vas for hypertrophy of the prostate, 222.
 Catarrh, chronic postnasal, 459.
 Cat-gut by dry heat, the sterilization of, 217.
 Cataracts of rapid formation, 220.
 Cataract, based on 750 cases of extraction, remarks on the surgical treatment of, 143.
 Causes of ophthalmoplegia, 304.
 of the inactivity of antidiphtheritic serum when introduced into the stomach or rectum, 932.
 Celluloid thread according to San.-Rath Dr. Pagenstecher, 944.
 hairpins, the inflammability of, 359.

Cerebro-spinal meningitis, an epidemic of, 47.
 Cerebral and meningeal syphilis treated by intramuscular injections of insoluble salts of mercury, 787.
 Cervical growths, the lateral route for the removal of, 702.
 sympathetic in glaucoma, resection of, 61.
 Cervix, artificial dilatation of, 549.
 Chancre, syphilis, 513.
 Chancroid, diagnosis and treatment of, 425.
 Charity, well directed, 319.
 Charite, statistics of the service of the accoucheurs of the, 308.
 Chicago draining canal, report to the committee upon the, 934.
 Children under ten; should they learn to read? 372.
 Choked disk, the etiology and mechanism of, 544.
 Chorea, a new treatment of, 480.
 Chloroform in India, 139.
 Cholelithiasis in infancy and childhood, contributions to the symptomatology and diagnosis of, 293.
 Cholecystitis simulating appendicitis, interesting case of, 1.
 Chronic articular rheumatism, treatment of, 477.
 asthenic gastritis, diagnosis and prognosis of, 749.
 asthenic gastritis, treatment of, 837.
 constipation, ending fatally with enormous dilatation of the sigmoid flexure, a case of, 119.
 endometritis, treatment of, 350.
 diseases of the kidneys, treatment of, 325.
 heart disease, Schott treatment of, 526.
 urticaria of the larynx, 219.
 catarrhal prostatitis, 223.
 prostatitis, ichthyol suppositories in cases of, 131.
 sthenic gastritis, the etiology and diagnosis of, 585.
 post-nasal catarrh, 459.
 prostatitis, 131.
 malarial nephritis, with report of a case, 689.
 tuberculous peritonitis cured by X-rays, 283.
 tuberculosis, the condition of the salivary glands and pancreas in, 132.
 Chrysarobin a specific for warts, 774.
 Citric acid, treatment of ozena by, 863.
 Creasote cure in the treatment of incipient phthisis, 859.
 Climate and health of Hawaii, 54.
 in Colorado in diseases of children, 214.
 in the treatment of tuberculosis, 778.
 Climatic treatment of phthisis, 634.
 Clinical aspects of granular kidney, some of, 290.
 manifestations and treatment of influenza upon the heart and circulation, 801.
 study of twenty-four cases of paralysis agitans, 766.

- Clinical study of the relation of the blood, the urine and the gastric contents in diseases of the stomach, 365.
studies with spleen and thyroid extract, 114.
- Clothing, zinc salts in, 370.
- Club foot, and its surgical treatment, 772.
- Coblentz Virgil, the newer remedies, including their synonyms, sources, methods of preparation, tests, solubilities, incompatibles, medicinal properties and doses as far as known, together with sections on organo-therapeutics, agents and indifferent compounds of iron, 719.
- Cobra poison in the blood, contribution to the study of immunity, action of, 132.
- Cocain and eucain, relative toxicity of, 930.
poisoning, contribution to the treatment of, 49.
- Cocksurenness in prognosis, 554.
- Cod-liver oil on the secretion of gastric juice, the influence of, 285.
- Coleman, T. D., the use of calomel in diphtheria, 740.
- Colorado in diseases of children, climate of, 214.
- Combination of syphilis and epithelioma of the tongue, 223.
- Common bile duct, cancer of, 852.
- Combined Wendelenburg Walcher posture in obstetric operating, 387.
- Complete monocular blindness following an injury to the head, attended by full restoration to vision, 767.
- Complications in typhoid, 375.
and sequelae resulting from appendiceal pus, 782.
- Congenital heart disease. A study of thirty cases, 733.
absence of the glans penis, 211.
ptosis with associated movements of the superior eyelids and the inferior maxilla, 381.
idiopathic dilatation of the colon, 773.
multiple nevus pigmentosus, a unique case of, 357.
syphilis, hemorrhage as a sign in, 207.
talipes, treatment of, 301.
- Connection between hypistaphyl and lepto-
toprosopy, 458.
- Congres de gynecologie d' obstetrique et de
pedietrie at Marseilles, report of, 65.
- Constipation without drugs, treatment of, 440.
- Contagiousness of tuberculosis, 299.
- Contribution to the treatment of cocain
poisoning, 49.
to the clinical study of the gastric
juice, 118.
to the study of ascending neuritis,
202.
to the study of leucoplasia buccalis,
543.
to the study of acute poliomyelitis,
to the study of aphasia, 531.
to the study of spinal neuritic
muscular atrophy, 120.
- Consciousness and hyperpyrexia, 629.
- Consumption, house air, 537.
- Consumptives, relation of the state to, 538.
- Convenient technique for the delivery of the
after-coming head where gross disproportion exists, 465.
- Copeman, Moncton, vaccination, its natural
history and pathology, 476.
- Copaiba, the excretion of sugar after the in-
jection of, 685.
- Corneal ulcer, local treatment of, 667.
ulcers, nitric acid as a cautery in,
885.
infection of the serpiginous type, a
peculiar form of, 544.
- Corrosive sublimate in stomatitis, 281.
sublimate, peculiar and severe re-
sults following an injection of, 206.
- Correspondence from Atlantic City, 79.
- Cosmic element in disease, 553.
- Creasote carbonate, intratracheal injections
of, 380.
local applications in lupus vulgaris,
treatment with, 125.
- Crede's method, expression of the placenta a
modification of, 713.
- Crepitant rales in cases of pleural effusion,
the occurrence of, 284.
- Cretinism and its treatment, 693.
- Cultivation of the bacillus leprae, 831.
- Cumston, Chas. Greene, a case of arthritis de-
formans of the hip joint, 571.
a case of traumatic effusion of the
hip joint, 401.
- Cure, open air, 554.
- Curettage of the uterus and operation for
laceration of the cervix, 548.
- Cycling during pregnancy, 615.
hygiene of, 299.
incident, 449.
- Cystic origin of maxillary pneumosinus,
58.
- Cystitis, its cause and treatment, 888.

D.

- Dacryocystitis in infants, 459.
- Dangerous thinning and elongation of the
lower uterine segment, including three
cases of rupture, 386.
- Darkest Russia, a barbarous custom in, 281.
- Datura stramonium, a case of poisoning with
the seeds of, 775.
- Death from dry cupping, 618.
rate from cancer in New Zealand, in-
crease of, 780.
a new sign of, by submersion, 453.
- Deardorf, A. G., chronic diseases of the colon
and some general disturbances caused
thereby, 354.
- Decided improvement in a case of locomotor
ataxia following the use of double chlorid
of gold and sodium, 161.
- Decidua malignum, a case of, 134.
- Delirium, a study of, 767.
- Demonstrations of methods in gastric thera-
peutics, notes on, 200.
- Dercum, F. X., hypnotism, its uses in medi-
cine, 321.
- Dermatology, derivations of pyrogallol, chrys-
arobin and resorcin, some new remedies in,
127.
- Dermatitis exfoliatum neonatorum, a case of,
128.
- Dermatology, toxins in, 609.
- Dermoid cyst over the center of the large
fontanelle, 47.
- Determination of the size, shape and position
of the stomach by means of the X-rays, 528.

- Diabetes mellitus quickly following mumps, a case of, 598.
 ensipidus and pregnancy, 309.
 the contraction of the palmar aponeurosis in, 597.
- Diagnosing tuberculosis, laboratory methods of, 901.
- Diagnosis of cancer and tuberculosis of the cecum, 922.
 of the condition of each kidney by inoculation of the separated sediments into guinea pigs in suspected renal tuberculosis, 125.
 and treatment of the stomach, the laboratory as an aid in, 488.
 and treatment of rupture of the bladder, 432.
 of cancer of the digestive organs, 603.
 and prognosis, the value of the pulse in, 753.
 in chronic disease, most important requisite to, 506.
 between suprarenic and subphrenic pyopneumothorax, 525.
 of eclampsia and the diagnosis of impending eclampsia, 789.
- Diet in tuberculosis, 616.
- Differential diagnosis of syphilitic eruptions and signs in the skin of former syphilis, 709.
 diagnosis between extra-uterine pregnancy and easy abortion, 66.
- Digestive juices upon toxins, the action of, 931.
- Digitalin, German soluble, 155.
- Digitalis, succedaneum to, 929.
- Dilatation of the ostium vaginae as a preventive of ruptured perineum, 790.
- Diphtheria in London, 35.
 bacilli in the urine, 53.
 the use of calomel in, 740.
 antitoxin, introduced by the mouth and rectum for curative purposes, experiments with, 777.
 sanitary police regulations to prevent the origin and spread of, 700.
 antitoxin, 375.
 failure of antitoxin in the treatment of, 436.
 bacilli, experiments to determine whether sewer gas will raise the toxicity of lowly virulent, 133.
 antitoxin in whooping-cough, 35.
 treatment of, 792.
 bacillus in the organs, 795.
 points in the treatment of, 478.
- Diphtheritic paralysis in cases treated with antitoxin, 780.
- Diplobacillary conjunctivitis, a clinical and bacteriological study of, 614.
- Diseases of the stomach and their diagnosis by clinical methods, 853.
- Disease affecting the nails, 691.
- Disinfection of railway coaches and street-cars operating in Ohio, 778.
 on some of the latest advancements with formalin, 455.
 of the hands, 872.
 the imperfection in hand, 781.
- Dislocations and fractures, 798.
- Disorders of menopause, 945.
- Diverticulum of the bladder, 545.
- Division of a ureter with successful end to end suture of the same, in a case of horse-shoe kidney, 943.
- Does bile possess antiputrefactive and antibacterial properties? 687.
- Danders, F. C., the nature and the consequences of anomalies of refraction, 474.
- Double kidney, report of a case, 289.
- Dowse, Thomas Stretch, the treatment of disease by physical methods, 317.
- Drainage of the urinary bladder, with prevention of urinary infiltration after suprapubic cystotomy, 867.
- Drinking water, chronic plumbism from, 90, 175.
- Dry cupping, death from, 618.
- Dust, value of, 467.
- Dwellings, on the question of disinfection of, 215.
- Dynamic theory, its application in medicine and hygiene, 617.
- E.
- Early marriage as a cure for social evils, 313.
- Eclampsia, treatment of, 774, 829.
 by infusion of salt solution, treatment of, 465.
 is it a microbic affection? 150.
 with special reference to the value of normal saline solution, 386.
 elevation of temperature in, 398.
- Ectopic gestation associated with primary tuberculosis of the Fallopian tube, 147.
- Eczema, what are we to understand by? 127.
 treatment of, 578.
 treatment of, in infancy and children, 371.
- Edema, acute circumscribed, associated with hemoglobinuria, 446.
 occurring in Grave's disease, symmetrical areas of, 770.
- Editors, advertisers in the role of, 874.
- Editorial mention, 232, 233, 315, 316, 392, 471, 472, 555, 556, 717, 794, 876, 952.
- Egyptian Soudan, climate of, 137.
- Electric current, sensation of taste induced by, 543.
- Electrolysis, some practical uses for, 345.
- Electricity as a laxative, 367.
- Electrolysis and cataphoric medication, 145.
- Elephantiasis with calomel, treatment of, 302.
- Elimination of phosphorous and nitrogen in leukemia, 523.
 in typhoid fever, 552.
- Employment of the hypnotic state to produce analgesia, 456.
- Endemic of pemphigus, 855.
- Endocarditis ulcens maligna, contribution to the study of, 686.
- Endometritis, congestion, or what? 546.
- Enlarged prostate in the old, 239.
- Enlargement of the left auricle by percussion and other clinical uses of dorsal percussion, on the recognition of, 920.
- Enormous dilatation of the sigmoid flexure, a case of chronic constipation ending fatally and associated with, 119.
- Enteric fever in India, 860.
 fever in children, 162.
- Enteroptosis, on, 283.
- Entrance of air into the veins, effect of, 782.

- Epidemic of typhoid fever at Oberbipp; a contribution to the etiology and hematology of typhus abdominalis, 918.
- cerebro-spinal fever, antistreptococcic serum, 605.
- Epilepsy, bromid of strontium in, 35.
some further notes on the use of bromid of strontium in, 211.
shortcomings by the surgical treatment of, 635.
- Epithelioma of the lower lip, 910.
treatment of, 636.
of the urethra in the female, 711.
- Erythema scarlatinoides produced by quinin, 607.
multiforme on the buccal mucous membrane, 292.
- Erysipelas, alcohol in the treatment of, 227.
by carbolic and camphor, treatment of, 858.
antistreptococcic serum in, 881.
treatment of, 301.
- Erysipeloid, erythema serpeus, 447.
- Erythema toxicum with fatal termination, 927.
- Eshner, A. A., a case of myxedema, 822.
- Esophageal stricture, an analysis of forty cases, 364.
- Esophagoscopy, its application in two cases, 923.
- Ethmoid cells, a case of empyema of the, 939.
- Etiology and prophylaxis of scurvy, 918.
of iritis, 706.
of trachoma, 220.
and classification of peritonitis, 297.
- Ewart, Wm., a note on cases of phthisis with peculiar cardiac physical signs, 164.
on the practical aspects of dorsal percussion, and in particular percussion of the spine, 641.
relation of gout to rheumatoid arthritis, 241.
- Ewart, Dr., on gout, rheumatoid arthritis, etc., 312.
- Examination of tuberculous sputum in children, 239.
- Excretion of sugar after the ingestion of copaiba, 685.
- Exophthalmic goiter with sulphate of quinin, treatment of, 296.
- Expelling the placenta, a new method of, 947.
- Experiments in uric acid urea, 34.
to determine whether sewer gas will raise the toxicity of lowly virulent diphtheria bacilli, 133.
- Experiment in the treatment of ineradicable cancer of the uterus, 226.
- Experimental production of tuberculosis endocarditis, 197.
study of the effects of hydrogen dioxide upon the normal action of unorganized ferments, 118.
- Expression of the placenta a modification of Crede's method, 713.
- Extrauterine pregnancy, operation for, 66.
- Exploratory operations upon the stomach for obscure and obstinate gastric symptoms, remarks upon, 439.
- Extragenital syphilitic, communications on, 62.
genital syphilis, 371.
- Eye-symptoms of akromegaly, 940.
- F.
- Fallopian Tube, ectopic gestation, associated with primary tuberculosis of, 147.
- Family physician of the future, 153.
physician of the past, 152.
- Fetus, symphysiotomy after death of, 872.
- Fibro-lipoma of the tonsil, 939.
- Fibromyoma, surgical treatment of, 869.
- Fistulas, 764.
- Fixation abscess, on the value of, 761.
- Flagella of micrococcus, note on the, 453.
- Floating kidney with intermittent hydronephrosis, 606.
liver and its clinical significance, 765.
- Food, poison in, 616.
- Foot and ankle, chronic syphilitic ulceration of, 29.
- Foreign body in the larynx, 939.
- Foreign bodies from the eye, 622.
- Form of the chest in phthisis and its significance, 921.
- Formalin in the treatment of blepharitis, 61.
on some of the latest advancements in disinfection with, 455.
in the treatment and removal of inoperable malignant growths,
- Fornix vaginae during labor, rupture of, 789.
- Forster Burnside, a unique case of congenital multiple nevus pigmentosus, 357.
- Fowler, Thos. B., supernumerary glans penis, 434.
- Fractures, subcutaneous nailing with unusual tendency to displacement, 301.
and dislocations, 798.
- Fracture of patella; advisability of bone suturing, 619.
of patella, results of open operation in the treatment of, 379.
- Fuchs, Ernest, text book of ophthalmology, 559.
- Further observations on a case of total extirpation of the stomach in the human subject, 40.
- Furuncles, with salicylic acid, treatment of, 771.
- Furunculosis, etiology and treatment, 126.
etiological treatment in, 126.
- G.
- Gall-stone, crepitus and friction, 881.
- Gall-stones, pathology of, 410.
report of a case, intestinal obstruction from, 38.
- Gangrene, carbolic acid, 858.
of the male genital organs, 867.
- Gastralgia, true, 200.
- Gastric secretions in organic heart disease, 636.
juice, the influence of cod-liver oil on the secretion of, 285.
diseases, a symposium on the treatment of, 70.
photography, 478.
ulcers, perforating, 457.
juice, neurolal conditions involving excessive secretion of, 905.

- Gastric ulcer in an infant 2 months old, 117.
surgery in carcinoma and simple ulcer, 39.
cancer, Oppler-Boas bacillus in the diagnosis of, 40.
contents and the best way to obtain them after test meals, 352.
juice, the secretion of, 529.
juice, a contribution to the clinical study of, 118.
- Gastroschisis; a case of, 454.
- Gastrosuccorhea, 922.
- Gelatin treatment of aneurism, 600.
- Generalized vaccinia, a case of, 399.
- General practice, the application of asepsis and antiseptics in, 100.
pigmentation, 448.
surgery, importance of internal remedies in, 929.
hemochromatosis, 608.
- Genito-urinary pain, 868.
- German measles, exanthem of, 47.
- Germicide, sulphuretted hydrogen as a, 695.
- Gigantic size, tumors of, 944.
- Glans penis, congenital absence of, 211.
- Glaucoma, massage and the relief of eye-strain in the treatment of, 864.
- Glycerino phosphate of soda in diseases of the nervous system, investigations of, 295.
- Gonococcus, in the purulent secretions of the genital organs of prostitutes, 135.
- Gonorrhea, spinal complications of, 944.
in the male, treatment of, 267.
diagnosis of, 18.
in women, diagnosis of, 98.
and its complications, 383.
treatment of, 222.
- Gonorrheal ophthalmia, an abortive treatment of, 836.
vaginitis, treatment of, 548.
arthritis, 223.
- Gould, G. M., an illustrated dictionary of medicine, biology and allied sciences, 157.
- Gout, notable discussion on, 389.
- Granular conjunctivitis by salicylic acid, treatment of, 143.
kidney, some of the clinical aspects of, 290, 444.
- Grave's disease; symmetrical areas of solid edema occurring in, 770.
- Guaiamar, a derivative of guaiacol, the physiological action and therapeutics of, 928.
- Guaiacol, local applications of, 295.
carbonate and creasote carbonate in bronchitis and pneumonia, 909.
in the treatment of epididymitis, the efficacy of, 374.
- Gynecology and obstetrics, bromid of ethyl in, 624.
curet in, 546.
- H.
- Haab, O., M.D., atlas of the external diseases of the eye, 474.
- Habitual constipation, non-medical treatment of, 119.
luxation of both patellae, 319.
- Hairpin in surgery, manifold uses of, 443.
- Hands, disinfection of, 872.
- Hare, H. A., fever and its treatment, 561.
- Harveian lectures, 72.
- Hawaii, climate and health of, 54.
- Hayem's artificial serum in malignant syphilis, 534.
- Hay fever, 746.
asthma, and spasmodic vasomotor rhinitis, 704.
treatment of, 705.
- Hearing, a case of true aprosexia without complicating impairment of, 458.
- Heart, digitalis in mitral disease of, 163.
rupture of, 399.
disease, treatment of the edema by mechanical means, 361.
on the question of hypertrophy of, 601.
disease and altitude, 830.
in chlorosis, clinical observations upon the structural changes of, 437.
- Hematuria from healthy kidney, notes on a case of, 854.
an exceptional case of, 532.
- Hemoglobinuria, associated with acute circumscribed edema, 446.
- Hematemesis, treatment of, 224.
- Hemochromatosis, general, 608.
- Hemorrhage following removal of adenoid vegetations, 542.
postpartum, 550.
- Hemorrhagic pleuritis in children, 36.
- Hepatic colic, a contribution to the pathology of, 765.
- Heredity in tuberculosis, 362.
- Hernia, radical cure of, by Kocher's method of invagination with lateral displacement of the neck of the sac, 619.
in the sexes, and the various types in the female; a statistic comparison on the relative frequency of, 887.
following operation for appendicitis, 702.
- Heroin, a substitute for morphia, the therapeutics of, 130.
- Herpes, after large doses of arsenic, a case of, 450.
- High myopia, surgical treatment of, 706.
- Hip disease; its treatment and results, 539.
joint, a case of traumatic effusion of, 401.
- Holmes, W. Edmunds, pus and its treatment, 834.
- Holocain as an anesthetic in eye, ear, nose and throat operations, 697.
- Homeopathy in Russia, a question of, 399.
- Horwitz, Orville, causes of urinary retention in the male; its treatment, 665.
- Human organism, influence of castration upon, 226.
tuberculosis and bovine tuberculosis, the relations which exist between, 214.
serum, a test for, 17.
- Hydrotherapy in stomach diseases, 67.
- Hydrochloric acid, what constitutes an excess of, 873.
- Hydro vaccineforme, 46.
- Hydronephrosis, intermittent, successfully treated by operation, a case of, 607.
- Hygiene, the dynamic theory and its application in medicine, 617.
- Hyperacid pretubercular serum, 282.

- Hyperpyrexia and consciousness, 629.
Hyperemic laryngitis, applications of supra-renal liquid, one per cent., in the treatment of, 141.
Hypertrophy of the prostate, castration and resection of the vas for, 222.
Hypertrophic rhinitis, submucous treatment of, 141.
Hypnotic suggestion in medicine, 469.
state to produce analgesia, employment of, 456.
Hysteria, infantile, 372.
in children, 208.
Hysterectomy, vagino-abdominal, 227.
- I.
- Ichthyol in acne, the use of, 122.
suppositories in chronic prostatitis, 131.
in phthisis, 374.
Immediate and remote effects of athletics upon heart and circulation, 921.
Immunity, action of cobra poison in the blood, a contribution to the study of, 132.
Importance of internal remedies in general surgery, 929.
of sulphur springs in the treatment of syphilis, 461.
of artificial abortion, with treatment of 60 cases, 67.
of removing adenoid vegetations from the fossae of Rosenmuller, 380.
Important anomaly, 683.
Improved method for finding peptones in albuminous urine, 240.
Incontinence of urine, 799.
India, enteric fever in, 860.
Indications and contraindications for hysterectomy in puerperal infection, 948.
Indican, quantitative estimation of, 605.
Inducing premature labor, new method of, 465.
Infantile hysteria, 372.
eye, occurring during labor, injuries of, 712.
Infants, the question of gruel in the feeding of, 694.
Infection of the bacillus pyocyaneus with a report of a case, 53.
in childhood, pyocyaneus, 449.
Infective sarcomata in dogs, 213.
Infectious diseases, experimental investigations of the theory of vascular disturbances in, 523.
Inflammability of celluloid hairpins to the static breeze, 359.
Influence of pathological states upon elimination of water and carbon dioxide by the skin, 206.
of castration upon the human organism, 226.
of menstruation on lactation, 466.
Influenza upon the heart, the effects of, 801.
Inguinal hernia, a new operation for, 861.
Inherited syphilis, signs of, 709.
Injections of calomel in seborrheic eczema, 370.
intravenous saline, in severe hemorrhage, 540.
Injuries of the infantile eye occurring during labor, 712.
- Inoculation, the production of scarlatina by, 775.
Insanity, post-operative, 307.
after-effects of surgical procedure on the generative organs of females, for, 64.
Insufficiency of the adrenals as a cause of a symptom-complex of acute course (not Addison's disease), 762.
Intestine, localized tuberculosis of the, 861.
Intestines, end to end anastomosis of the, 139.
Intestinal obstruction, medical treatment of, 613.
obstruction from gall-stones, with report of a case, 38.
International conference for the prevention of syphilis and venereal diseases, 943.
Interstitial keratitis, synovitis associated with, 459.
Intracranial tumors, on the localization of, 604.
Intragastric nippers, 166.
Intranasal operations, use of rubber splints in, 940.
Intrauterine sepsis, local treatment of, 466.
Intussusception, acute, in infants; some details in the treatment of, 772.
Investigation upon the plantar reflex, with reference to the significance of the variations under pathologic conditions; including an enquiry into the etiology of acquired pes cavus, 853.
Inunction cure, 62.
Iodids in saliva, test paper for the detection of, 36.
Iodoform as a remedy in lupus erythematosus, 206.
Iritis, diagnosis of, 899.
etiology of, 706.
Iron in the liver and spleen, in two cases of malaria; notes on the presence of, 133.
on the absorption of, 535.
- J.
- Jackson, Henry, the value of the pulse in diagnosis and prognosis, 753.
Japan, English as she is wrote in, 78.
Juice of fungi in snake poisoning, 799.
- K.
- Keratosis of the palm, 917.
of the lip—precancerous, 911.
Keyloids by scarification, treatment of, 292.
Kidney disease, early recognition of, 768.
vascular supply of, 788.
sarcoma of, 690.
Kocher's method of curing reducible hernia by lateral displacement of the neck of the sac, 619.
Kyle, D. Braden, general consideration of mucous membranes of the upper respiratory tract, 22, 186, 427.
the use and abuse of the nasal douche, 670.
- L.
- Labor complicated by pelvic deformities, the operative treatment of, 948.
a resume of one thousand cases of, 150.
preparation needed for a case of, 106.

- Laboratory notes, 135.
 Labord's method of resuscitation in connection with anesthesia, 138.
 Lambotte, E., the treatment of stricture of the esophagus, 273.
 Large foreign bodies in the conjunctival cul-de-sac, 220.
 Larynx, chronic urticaria of, 219.
 foreign body in, 939.
 abscess of the, 938.
 central origin, contribution to the study of the, 60.
 Lateral curvature, correction in, 842.
 route for the removal of cervical growths, 702.
 Lavage for headache, 436.
 Lead dioxid in urine analysis, 671.
 Lecture, Sansom's, 873.
 Harveian, 72.
 Leonard, Chas. L., a sepsis and antiseptics of minor surgery, 581.
 the application of asepsis and antiseptics to general practice, 100.
 Leprosy, 52.
 Leucocytes to immunity, the relation of, 931.
 Leucoplasia buccalis, contribution to the study of, 543.
 Leukemia, elimination of phosphorous and nitrogen in, 523.
 Lichty, Jno. A., dilatation of the stomach, with especial reference to etiology and treatment, 256.
 Life insurance, early recognition of kidney disease, especially in reference to, 768.
 Limousin Bocquellon, formulaire des medicaments nouveaux pour 1899, 318.
 Lip, keratosis of, 911.
 Liquid air, a few of the clinical uses of, 775.
 Liver, a sewing needle in, 61.
 Local and general diseases, study of the hand for indications of, 74.
 treatment of intrauterine sepsis, 466.
 Locomotor ataxia, the contents of the stomach in gastric crises of, 528.
 Lower lip, epithelioma of, 910.
 extremities, some points of interest in the study of the deep reflexes of the, 366.
 Lungs, polypoid intratracheal tumor, causing a flapping inspiratory murmur in, 284.
 Lupus erythematosus in a tubercular subject, autopsy, report, 533.
 erythematosus, iodoform as a remedy in, 203.
 erythematosus by scarification and pressure pads, treatment of, 609.
 erythematosus, 932.
 erythematosus, amenability to treatment, 126.
 and X-rays, 294.
 vulgaris, by local applications of creasote, treatment of, 125.
- M.
- Male external genital organs, gangrene of, 867.
 urethra, obstructive diseases of, 893.
 Malaria, 133.
 absence of negro immunity, variety, 213.
 quinin in, 684, 774.
 Malaria, splenectomy in, 195.
 and yellow fever, mosquitoes as transmitters of, 700.
 recent investigations upon, 524.
 Cuban, camphorated tincture of opium in, 129.
 notes on the presence of iron in the liver and spleen in two cases of, 133.
 Malarial parasite, conditions favoring exflagellation of, 136.
 parasite, conditions following exflagellation of, 136.
 peripheral neuritis, 122.
 Malformation, a case of, 113.
 Malignant disease and aniline, 194.
 syphilis, Hayen's artificial serum injected in, 534.
 tumors by bacterial toxins and anti-cancerous serums, treatment of, 196.
 growths, formalin in the treatment and removal of inoperable, 451.
 Manifold uses of the hairpin in surgery, 443.
 Manley, Thos. H., on the relative frequency of hernia in the sexes and the various types in the female. A statistic comparison, 887.
 Marchi's fluid; effect on nervous tissue having undergone *post-mortem* changes, 134.
 Martyrs of science, 479.
 Marjantshik, N. P., on artificial sterility. An endeavor to establish indications for preventing conception, 30.
 Masland, H. C., a case of Paget's disease of the breast of thirteen years' duration not showing a carcinomatous involvement of the mammary gland, 81.
 Massage of the stomach and large intestine after the introduction of medicated solutions, 440.
 of the abdomen in deficient lacteal secretion, 790.
 and the relief of eye-strain in the treatment of glaucoma, 834.
 in malposition of the uterus, 548.
 Maternal dystocia, some causes of, 387.
 Maxillary pneumosinus of cystic origin, 58.
 Mechanical laxative, 636.
 treatment of the edema of heart disease, 361.
 Medico-Chirurgical College wins, 319.
 Medicine, hypnotic suggestions in, 469.
 the shortcomings of, 468.
 liquid air in, 636.
 Medical news, pocket formulary for, 238.
 examinations, three thousand questions on, 157.
 treatment of intestinal obstruction, 613.
 treatment of appendicitis, 228.
 Membranous tracheitis, 784.
 Memorial prize, William F. Jenks, 638.
 Memminger, A., practical examination of the urine, with special reference to diagnosis, 475.
 Menopause, disorders of, 945.
 Menstruation on lactation, the influence of, 466.
 Mercurial injections, some of the untoward effects of, 398.
 Mercury for subcutaneous injection, a superior combination of, 477.
 Meteorological phenomena, frequency of injurious, 377.

- Methods in gastric therapeutics, notes on the demonstration of, 200.
- Method of differential staining of the micro-organisms of human and avian tuberculosis, leprosy and smegma, 51.
- Methylene blue, in the diagnosis of renal diseases, the use of, 202.
- 685.
- McFarland, Joseph, immunity and the use of normal non-immunized serums, 566.
- gall-stones, 333.
- Microscopic diagnosis of trachoma.
- Microcidine, 505.
- Midwifery forceps, the use and abuse of, 150.
- Milk, butter, oils, etc., estimating water in, 398.
- leg following typhoid fever, an unusual percentage of cases of, 4.
- Minor surgery, asepsis and antisepsis of, 581.
- Mississippi Valley Medical Association, 541.
- Mitral stenosis and its early diagnosis, 117.
- Mixed malaria and typhoid, camphorated tincture of opium in, 129.
- Monocular diplopia and polyopia, 382.
- Montgomery, E. E., treatment of chronic endometritis, 350.
- diagnosis and treatment of internal pelvic hemorrhage, 20.
- the importance of early recognition of carcinoma uteri, and the methods by which it is attained, 897.
- the treatment of displacements of the uterus, 742.
- the use and abuse of pessaries, 184.
- Moral effects of absence of the internal female sexual organs, 307.
- Morris, Henry, on the origin and progress of renal surgery, 473.
- Mosquitoes as transmitters of yellow fever and malaria, 700.
- Motor functions of the stomach by the aid of the Roentgen rays, a study of, 41.
- Movable kidney, treatment of, 628.
- third kidney, a case of, 368.
- kidney and its treatment, 444.
- kidney in children, 44.
- kidney with special reference to its influence on the nervous system, 123.
- kidney, medical treatment of, 769.
- kidney, 369.
- kidney, 788.
- Mucous membranes of the upper respiratory tract, general consideration of, 22.
- Multiple pregnancy, a case of, 387.
- echinococcus of the abdominal cavity, 55.
- angiosarcoma, a study of, 611.
- pregnancy, 151.
- Mushroom juice as an antitoxin against serpent venom, 298.
- Musser, J. H., and Sailer, Geo., hemorrhagic diathesis in typhoid fever, 827.
- Myopia, successful operation for, 305.
- Myxedema, a case of, 822.
- N.
- Naftalen, 49.
- Napoleon's death, cause of, 637.
- Narcolepsy, a case of, 766.
- Nasal duct by a fountain syringe, irrigation of, 61.
- douche, the use and abuse of, 670.
- Naso-pharynx, adenoid tumors of, 938.
- Nature of acute leukemia, 849.
- Neglect of sexual symptoms in the treatment of the male genito-urinary organs, 943.
- Nephrectomy and the desirability of the earlier diagnosis of the conditions requiring it, 782.
- Nephrotomy, obscure hemorrhage from a single kidney and its cure by, 124.
- Nephropexy, indication for, in chronic nephritis of movable kidney, 532.
- Nephritis without albuminuria, 925.
- preliminary notes on the prognosis of, 926.
- chronic, affecting a movable kidney as an indication for nephropexy, 532.
- what are the symptoms of? 44.
- Neuralgia, the surgical treatment of, 456.
- Neuritis of the femoral, cutaneous, 442.
- from the ingestion of putrefying pork, 41.
- Neurosis fever, 201.
- Nervous syphilis, stigmata of, 121.
- New and promising remedy for tuberculosis, 232.
- born child, syncope after delivery as an excuse for the death of, 712.
- gastroscope, 233.
- method of drainage of the bladder after suprapubic cystotomy, 887.
- method of expelling the placenta, 947.
- method of reducing old dislocations of the lower jaw, 936.
- method of inducing premature labor, 465.
- operation for inguinal hernia, 861.
- operation for stone, 138.
- treatment of chorea, 480.
- treatment of tetanus, 937.
- Nippers, intragastric, 166.
- Nitric acid as a cautery in corneal ulcers, 865.
- Nitrate of silver, abortion by means of, 296.
- Nocturnal pollutions and premature ejaculations, treatment of, 145.
- Normal non-immunized serums, concerning immunity and the use of, 415.
- non-immunized serums, immunity and the use of, 566.
- Note on the flagella of micrococcus, meletensis and bacillus pestis, 453.
- Notes on the treatment of severe chorea by sulphocarbolate of sodium, 858.
- on a case of hematuria from healthy kidney, 854.
- Northwestern University Woman's Medical school, changes in, 319.
- O.
- Obstetricians and gynecologists, the American Association of, 666.
- Obstetric don'ts, 480.
- Obstructing cancer of the pylorus too extensive for complete removal, a simple palliative operation applicable to, 936.
- Occurrence of crepitant rales in cases of pleural effusion, 284.
- of rheumatic fever without arthritis, 761.

- Ocular complications of puberty in females, 221.
 muscles, functional disturbances of, 265, 423, 516.
- Oculo-motor paralysis from typhoid fever, 707.
- Omphalotripsy, 550.
- Ophthalmoplegia, causes of, 304.
- Open-air cure, 554.
- Operation in uterine fibroids, the present position of the question of, 463.
 for extrauterine pregnancy at full term, 66.
- Operations on the eye, nose and throat, holocain as an anesthetic in, 697.
- Operative treatment of labor complicated by pelvic deformities, 948.
 treatment of varicose veins of the leg, 619.
 technique for peritonsillar abscess, 620.
 treatment of palmar abscess, 781.
 treatment of a stomach presenting the shape of an hour-glass, a case of, 441.
- Ophthalmic tarsi, the treatment of, 865.
- Oppler-Boas bacillus in the diagnosis of gastric cancer, 40.
- Organic heart disease, gastric secretions in, 636.
- Origin and progress of renal surgery, 473.
- Orthoform in calomel injections, the use of, 379.
- Our seashore sanitarium, 714.
 talks, 72.
- Ovary, stones in, 65.
 conservative surgery of, 149.
- Ovariectomy, 64.
- Ovarian disease, the use of parotid gland extract in the treatment of, 710.
 tumor removed during typhoid fever, 547.
- Over-eating by idle people, 240.
 distension of the uterus from excess of amniotic liquid, 549.
- Ox blood as a remedy, 763.
- Oxygen treatment of wounds, 540.
- Ozena, serum-therapy in, 218.
- P.
- Pain, genito-urinary, 868.
- Palmar abscess, operative treatment of, 781.
- Palm, keratosis of, 917.
- Pancreas, the spleen and ferments of the, 852.
- Panhysterectomy, 66.
- Paralysis agitans, a clinical study of twenty-four cases of, 766.
 of the larynx, central origin, a contribution to the study of, 60.
- Parasite in syphilis, 376.
- Paraldehyd in asthma, 451.
- Paresis of the extremities in scarlet fever, 448.
- Paris, the water supply of, 454.
- Parker, W. Thornton, concerning immunity and the use of non-immunized serums, 415.
- Passiflora incarnata, 929.
- Patella, fracture of, advisability of bone suturing, 619.
- Patent medicine, death resulting from, 211.
 medicine in the public press, 551.
- Pediatrics, rise, progress and present needs of, 48.
- Pelvic hemorrhage, diagnosis and treatment of, 20.
- Pemphigus, an endemic of, 855.
- Pepsinogen, the chemical properties of, 529.
- Perforating gastric ulcer, 457.
 ulcer of duodenum; operation; recovery, 364.
- Perineum, treatment of complete rupture of, 225.
- Peritonsillar abscess, septic thrombophlebitis as a complication of, 939.
- Permanent separation of the amnion and chorion at term, 627.
- Peritonitis, etiology and classification of, 297.
- Personality, double, 78.
- Perineum, central laceration of, 148.
- Pessaries, use and abuse of, 184.
- Pessary in the vagina for thirty-three years, 480.
- Petroleum emulsions are not nutrients, 633.
- Phantom tumors and their treatment, medical and surgical, 791.
- Phlegmasia alba dolens, 372.
- Phlegmones, emphysematosae and emphysematis hepatitis, the etiology of, 435.
- Phthisis, climatic treatment of, 664.
 some aids to its diagnosis, pretubercular stage of, 114.
 and its significance, the form of the chest in, 921.
 is there a pretubercular stage of? 154
- Physical development, question of the influence of public school on the pupils in, 537.
- Physiological action and therapeutics of guaiamar, a derivative of guaiacol, 928.
- Physician's bill of ye olden times, 160.
- Physiological nasopharyngeal extract; its application in the treatment of pulmonary tuberculosis, 380.
- Pigmentosum xeroderma, 912.
- Pigmentation, general, 448.
- Pineal gland, and sexual development, 737.
- Piperazin, the removal of gouty tophi by injections of, 949.
- Placenta, retention of, 310.
 previa by induction of labor and version, treatment of, 617.
- Plague bacillus, restrictions as to the handling of, 601.
- Plea for an earlier operation in knee-joint tuberculosis, 703.
- Pneumonia with meningitis, a rare case of, 3.
 in children, bacteria of, 128.
 based on the condition of the vasomotors, treatment of, 35.
- Poisoning, sulphonal, 857.
 by boracic acid, symptoms of, 302.
- Poison in food, 616.
- Polypoid intratracheal tumor causing a flapping inspiratory murmur in the lungs, 284.
- Pope, surgeon in chief to, 589.
- Post-hemorrhagic blindness, 707.
- Post-operative insanities and undetected tendencies to mental disease, 385.
- Post-pregnant woman, when shall she sit up? 799.
- Post-operative insanity, 307.
- Posture in the treatment of occipital posterior positions, value of, 549.

- Powell, W. M., powders, pocket medical formulary, 237.
- Practitioner's index, *The International Medical Annual*, 393.
- Precancerous keratosis of the lip, 911.
- Preble, Edward, diet during pregnancy as a preventive of dystocia and for the determination of sex, 500.
- Precocious menstruation, a rare case of, 151.
- Pregnancy, ectopic, 150.
radiography in, 626.
and labor, suggestion in, 790.
orexine in the vomiting of, 467.
multiple, 151.
prolonged, 949.
- Preliminary notes on the prognosis of nephritis, 923.
- Pregnant women, present-day requirements in the management of, 511.
- Preliminary note on the use of asparagus as a diuretic, 929.
- Premature labor, notes on the induction of, 627.
- Prescriptions by noted therapeutists, 320, 400, 560, 720.
- Present aspect of some vexed questions relating to tuberculosis, with suggestions for future research work, 686.
- Prevention and cure of acute gonorrhea, 868.
- Primary renal tuberculosis of twenty years' standing, a case of, 855.
- Procedure in vaginal fixation, 147.
- Professional fees, large, 639.
- Prognosis of nephritis, preliminary notes on, 926.
- Prognostic significance of retinal hemorrhages, 222.
- Progressive medicine, 475.
- Prolonged pregnancy, 949.
- Prostatic hypertrophy, a preliminary report of three cases, Bottini's galvanocautic treatment of, 63.
hypertrophy, treatment of, 623.
hypertrophy, ligations of spermatic vessels for, 545.
- Prostitutes, gonococcus in the purulent secretion from the genital organs of, 135.
- Prophylaxis and treatment of puerperal fever, 550.
- Prophylactic power of antitoxin, 231.
- Protargol, argyrosis of the conjunctiva, result of, 210.
in gonorrhea, 623.
in rhinology and laryngology, 542.
in the treatment of blepharitis, 210.
- Pruritus, treatment of, 771.
- Pseudo-tuberculosis, 453.
hominis streptothricha, 116.
- Puberty in females, ocular complications of, 221.
- Public press, patent medicine in, 551.
- Puerperal eclampsia, saline transfusion in, 151.
infection, indications and contraindications for hysterectomy in, 948.
fever, prophylaxis and treatment of, 550.
sepsis treated by antistreptococcus serum and unguentum crede, a case of, 695.
eclampsia, veratrum viride in, 211.
fever, treatment of, 309.
- Pulmonary tuberculosis among the insane at St. Peter, Minnesota, 215.
tuberculosis, physiologic naso-pharyngeal extract; its application in the treatment of, 380.
tuberculosis, on the use of valerianate of creasote and guaiacol in the treatment of, 696.
tuberculosis, the utility of a mountainous climate in the treatment of, 779.
- Pulsus-paradoxus, with special reference to its occasional occurrence on one side only, 438.
- Punishment, theory of, 759.
- Pupil, iridocystectomy for occlusion of, 544.
- Pyle, Walter L., testing vision and accommodation, 104.
local treatment of corneal ulcer, 667.
functional disturbances of the ocular muscles, 265, 423, 516.
diagnosis of iritis, 899.
- Pylorectomies, five successful, 570.
- Q.
- Question of operation in uterine fibroids, the present position of, 433.
of disinfection of dwellings, 215.
of determining the quality of the air of dwellings by means of a solution of permanganate of potash, 933.
- Quantitative estimation of indican, 605.
- Quinin in malaria, 774.
- Quinsy, treatment of, 310.
- R.
- Radiograph and the clinical radioscope, 393.
- Rapid formation, cataracts of, 220.
- Rare skin disease, ancanthosis nigricans, a case of, 45.
- Rectal examination in doubtful cases of appendicitis, the importance of, 218.
- Reducing shoulder dislocations by manipulations, a simple method of, 400.
- Reed, Boardman, the treatment of chronic atrophic gastritis (ordinary gastric catarrh), 837.
neurosal conditions involving excessive secretion of gastric juice (hyperchlorhydria, hyperchylia, gastroxynsis, Reichmann's disease, etc.), 905.
important requisite to a correct diagnosis in chronic disease, 506.
the prognosis and treatment of chronic atrophic gastritis (acid gastric catarrh), 674.
treatment of acute gastritis, 272.
diagnosis and prognosis of chronic atrophic gastritis (ordinary gastric catarrh), 749.
important quantitative tests of the stomach contents, 430.
the etiology and diagnosis of chronic atrophic gastritis (acid gastric catarrh), 585.
test meals and the best way to obtain the gastric contents after them, 352.
some often neglected points in examination of the urine, 108.

- Reed, Boardman, practical methods of determining the boundaries of the stomach and its state of motor function without the use of the tube, 24.
- Recent investigations upon malaria, 524.
- Recognition of enlargement of the left auricle by percussion and other clinical uses of dorsal percussion, 920.
- Reflex of air into the ureters, 861.
- Reinfection of syphilis, 222.
- Relative value of antiseptics and improved technique for the actual results of operative gynecology, 870.
- death rates from cancer and consumption, 779.
- toxicity of cocain and eucain, 930.
- Relations of the trachea and bronchi to the thoracic walls as determined by the Roentgen rays, 362.
- of the state to the consumptives, 538.
- Relation between the healthy and diseased portions of the stomach, 851.
- of pathologic conditions of the ethmoid region of the nose to asthma, 939.
- of leucocytes to immunity, 931.
- Remarks upon exploratory operations upon the stomach for obscure and obstinate gastric symptoms, 439.
- Remedy, ox blood as, 763.
- Removal of gouty tophi by injections of piperazin, 949.
- Renal diseases, the use of methylene blue in the diagnosis of, 202.
- casts, their significance and detection, 926.
- tuberculosis, experiences in, 123.
- and cardiac disease, the application of caffeine in, 612.
- incompetency, 769.
- diseases, Van Noorden on the treatment of, 391.
- Report to the investigating committee upon the Chicago draining canal, 934.
- Researches on muscular atrophy and contracture in organic hemiplegia, 202.
- Resuscitation, the Laborde method of, in connection with anesthesia, 138.
- Resection of the cervical sympathetic in glaucoma, 61.
- Resume of one thousand cases of labor, 150.
- Rest, 67.
- Retinal images, the estimation of the size of, 305.
- hemorrhage, prognostic significance of, 222.
- Retinitis, albuminuric, 786.
- Retropharyngeal adenitis and retropharyngeal abscess.
- abscess and retropharyngeal adenitis, 610.
- Review of recent legal decisions affecting physicians, dentists, druggists, and the public health, 473.
- Rheumatoid disease, 311.
- Rheumatic fever without arthritis, the occurrence of, 761.
- Rheumatoid arthritis, relation of gout to, 241.
- Rise, progress and present needs of pediatrics, 48.
- Ritual circumcision, infection through, 399.
- Robin, A., antitoxin in the light of scientific investigation, 721.
- laboratory as an aid in the diagnosis and treatment of diseases of the stomach, 488.
- counting the blood corpuscles, 187.
- Roentgen rays, relation of the trachea and bronchi to the thoracic walls by, 362.
- rays and their use in the diagnosis of tuberculosis, 198.
- Rupture of the bladder, diagnosis and treatment of, 462.
- of the intestine in the newly born, 712.
- of an appendiceal abscess during an examination; immediate laparotomy; recovery, 300.
- of the fornix vaginae during labor, 789.
- Russia, premature death in, 639.

S.

- Salt solution in sepsis after abortion, 466.
- Saline transfusion in puerperal eclampsia, 151.
- Salicylous substitute for the salicylates, 555.
- Salivary glands and pancreas in chronic tuberculosis, the condition of, 132.
- Sangree, Ernest, case of anencephalus, 112.
- Sanitary police regulations to prevent the origin and spread of diphtheria, 700.
- Sansom, A., Ernest, on the effects of influenza upon the heart and circulation; their clinical manifestations and their treatment, 801.
- Sarcoma by Coley's fluid, treatment of, 139.
- of kidney, 690.
- of the larynx with a long pedicle, 783.
- Scarlet fever, paresis of the extremities in, 448.
- the etiology of, 693.
- Scarlatina by inoculation, the production of, 776.
- Schlatter's case of removal of the stomach, final report of, 439.
- Schleich's mixture for anesthesia, 374, 375.
- mixture, anesthetic mixtures in general anesthesia with special reference to, 50.
- Schamberg, Jay F., treatment of eczema, 578.
- herpes zoster with special reference to supraorbital type, 734.
- Scientific investigation, antitoxin in the light of, 721.
- Scissors legs, a case of, 301.
- Scleroderma, 915.
- Scurvy, etiology and prophylaxis of, 918.
- Seborrheic eczema, injections of calomel in, 370.
- Secondary abdominal operations, 64.
- syphilis, treatment of, 718.
- Secretion, 638.
- Secret society of physicians, 151.
- Sending tubercular patients to distant resorts, 778.
- Septic thrombophlebitis as a complication of peritonillar abscess, 939.
- Serum therapy, 470.
- therapy, the treatment of fever, following delivery with special reference to, 790.

- Serum therapy in ozena, 218.
diagnosis, studies in, 297.
- Seventh congress against the abuse of alcohol, 319.
- Severe chorea by sulphocarbonate of sodium, notes on the treatment of, 858.
- Sewall, Henry, altitude and heart disease, 830.
- Sex, diet during pregnancy as a preventive of dystocia and for the determination of, 500.
- Sherrill, J. Garland, chronic syphilitic ulceration of the foot and ankle, 29.
- Sick room, the, 617.
- Silver and silver salts in surgery with special relation to wound surgery, 217.
- Simple palliative operation applicable to obstructing cancer of the pylorus too extensive for complete removal, 936.
method of reducing shoulder dislocations by manipulation, 480.
- Single kidney, its cure by nephrotomy, obscure hemorrhage from, 124.
- Skin cancers, one treatment of, 75.
- Sloughing corneal ulcers, treatment of, 60.
- Smirnow, L., chronic plumbism from drinking water, 90, 175.
cases of eclampsia elephantiasis, neuritis, and bronchiectasis, 590.
- Social evils, early marriage as a cure for, 313.
- Sodium cinnamate in 2½ per cent. solutions, given hypodermatically in tubercular patients; a few observations on the action of, 209.
- Sodii sulph. as a haemostat, employment of, 130.
- Solar plexus, treatment of certain functional derangement of the abdominal organs due to disturbance of the, 935.
- Some causes of maternal dystocia, 387.
important points regarding the perfection of asepsis, 937.
- Solly, S. E., recent inquiries concerning the blood changes induced by altitude, 481.
- Somers, Lewis, late consecutive oropharyngeal syphilis, 496.
- Sore nipples and mastitis, 789.
- Sphenoidal sinus, treatment of affections of, 783.
- Spinal tumor, intradural, opposite the body of the 4th dorsal vertebra; complete paralysis of the parts below the lesion; operation; with recovery, with ability to walk without assistance in 3 months, 443.
complications of gonorrhea, 944.
- Splachnaptosis and achylia gastrica, a case of, 37.
- Spleen and thyroid extract, clinical studies with, 114.
and the ferments of the pancreas, 852.
- Splenectomies, twenty-three, 216.
- Splenectomy in malaria, 195.
- Spontaneous gastroentero-anastomosis, a unique case of, 688.
- Sputum, the staining of, 901.
- Statistic comparison, on the relative frequency of hernia in the sexes and the various types in the female, 887.
- Static electricity for consumption, 156.
- Steno's duct, surgery of the fistulae of, 862.
- Stengel, Alfred, text-book of pathology, 74.
- Stewart, W. Blair, some practical uses for electrolysis, 345.
- Stigmata of nervous syphilis, 121.
- Stomach, with especial reference to etiology and treatment, dilatation of, 256.
the relations between the healthy and diseased portions of the, 851.
arterio-mesenterial obstruction of bowel at the duodeno-jejunal junction and its causal relation to dilatation of, 849.
and their diagnosis by clinical methods, some diseases of, 853.
surgery of, 56.
anachlorhydria in ulcer of, 602.
contents, important quantitative tests of, 430.
contents in the gastric crises of locomotor ataxia, 528.
and the state of its motor function without the use of the tube, practical methods of determining the boundaries of the, 24.
some suggestions as to diet in diseases of, 286.
in the human subject, further observations on a case of total extirpation of the, 40.
after anesthesia, washing out the, 131.
final report of Schlatter's case of removal of, 439.
diseases, hydrotherapy in, 67.
contents, producing constipation and diarrhea, abnormal reaction of, 199.
a case of partial removal of, 302.
cancer of, 41.
- Stomatitis, corrosive sublimate in, 281.
- St. Petersburg, alcoholism in, 720.
- Study of the motor functions of the stomach by the aid of the Roentgen rays, 41.
of the hand for indications of local and general diseases, 74.
of delirium, 767.
- Stricture of the esophagus, treatment of, 276.
- Strychnia, toxicity of, 695.
- Stypticin—cotarnine hydrochlorate in uterine hemorrhage, 536.
- Submucous treatment of hypertrophic rhinitis, 141.
- Submersion, a new sign of death by, 453.
- Succedaneum to digitalis, 929.
- Successful surgical treatment of aneurism of the abdominal aorta, 556.
- Sudden death among eminent physicians, 388.
paralysis of the third pair of nerves and interstitial keratitis in acquired syphilis, 543.
- Suffocation, subpleural ecchymoses and their significance in, 198.
- Suggestions as to diet in diseases of the stomach, 286.
- Suggestion in pregnancy and labor, 790.
- Sulphonal poisoning, 131.
- Sulphur springs in the treatment of syphilis, the importance of, 461.
- Superior cervical ganglion in glaucoma, resection of, 784.
combination of mercury for subcutaneous injection, 477.
- Superinvolution, disappearance of the uterus by, 596.

- Suprarenal body, the compensating hypertrophy of, 124.
- Suppurating inguinal lymphatics, therapy of, 867.
- Surgery of the fistulae of Stein's duct, critical study of the operative procedures in the new method of Professor Princeteau, 862.
- Surgical treatment of fibromyoma, 869.
 hints, 522, 800.
 treatment of acute puerperal sepsis with special reference to hysterectomy, 713.
 treatment of high myopia, 706.
 instruments may be admitted duty free, 638.
 treatment of neuralgia, 456.
- Surgeon in chief to the Pope, 589.
- Syncope after delivery as an excuse for the death of the new-born child, 712.
- Symptoms of nephritis; what are the? 44.
 of poisoning by boracic acid, 302.
- Sympathetic, therapeutic value of section of, 848.
- Symphysiotomy or Caesarian section, 940.
 after death of fetus, 872.
- Syphilitic reinfection (in a physician), 690.
 cutaneous scars, 942.
- Syphilography, the blue glass in, 291.
- Syphilis, parasite of, 376.
 some points in relation to, 672.
 reinfection of, 222.
 inheritance of, 63.
 treatment of, 747, 787, 832.
 and epithelioma of the tongue, combination of, 223.
 in Russia, 692.
 treated by intravenous injections of cyanid of mercury, 306.
 and venereal diseases, an international conference for the prevention of, 943.
 extra genital, 371.
- Symphysis pubis during labor, accidental separation of, 627.
- T.
- Tabes dorsalis, symptoms following lumbar puncture in, 766.
- Tachycardia, three cases of, 598.
- Talks in prospect, 716.
- Tardy dilatation of the cervix, adherence of membranes to the cervix an important cause of, 713.
- Taylor, J. Madison, summer complaint, 520.
 how to give medicine to young children, 269.
- Test paper for the detection of iodids in saliva, 36.
- Tetanus, by means of intracerebral injections of antitoxin, treatment of, 443.
 treated with antitoxin, a case of, 450.
 the new treatment of, 937.
 antitoxin, clinical and experimental, 535.
 following induced abortion, 713.
 by the intracerebral injection of antitoxin, the treatment of, 288.
 following criminal abortion, 466.
- Tetany and tetanoid spasm associated with gastric dilatation treated surgically, 38.
- Theories exploded, Carlsbad cure, 314.
- Theory of punishment, 759.
- Therapeutic value of section of the sympathetic, 848.
- Therapy of suppurating inguinal lymphatics, 867.
- Thomas, J. D., some points in relation to syphilis, 672.
 treatment of gonorrhea in the male, 237.
 diagnosis and treatment of chancroid, 425.
 syphilis — secondary and tertiary symptoms, 588.
 diagnosis of gonorrhea, 18.
 treatment of gonorrhea in women, 348.
 syphilis—the chancre, 513.
 obstructive diseases of the male urethra, 893.
 diagnosis of gonorrhea in women, 98.
 treatment of syphilis, 747, 832.
- Thompson, G. W., report of a triplet birth, one single child and a well defined case of thoraco-gastrodidymus, 594.
- Three consecutive Caesarian sections upon the same woman, 550.
 cases of tachycardia, 598.
- Thyroid gland in the treatment of the so-called rheumatic affections and especially arteriosclerosis, 360.
 dogs after removal of the, 133.
 the changes occurring in the blood of dogs after removal of the, 133.
 extract on the uterine fibroids, effect of, 225.
 medication and arsenic, 121.
- Tinea tonsurans of the scalp in an adult man, 691.
- Toadstool poison, eight cases of, 613.
- Tonsil, fibrolipoma of the, 939.
- Total obstruction of the bowel lasting thirty-four days, 703.
- Toxicity of strychnia, 695.
- Toxins in dermatology, 609.
- Trachoma, diagnosis, microscopic of, 460.
 the etiology of, 220.
 original investigations in its etiologic organism. I. The organisms as seen in the tissues and secretions. II. As seen in the cultures. III. Successful inoculation. IV. Toxins and antitoxins, 212.
- Trauma of the cervical region of the spinal and simulating syringomyelia, the study of the lesion in a case of, 42.
- Traumatic expulsion of both crystalline lenses in consecutive accidents, 942.
- Treatment of acute intussusception in infants, some details in, 772.
 of affections of the sphenoidal sinus, 783.
 of acute articular rheumatism; importance of salicylic acid over the salicylates in the, 774.
 of appendicitis, 378, 541.
 of atheroma, 389.
 of blepharitis with formalin, 61.
 of bronchial asthma, 398.
 of constipation without drugs, 440.
 of complete rupture of the perineum, 225.

- Treatment of cancer of the ear with solutions
of arsenic and alcohol, 51.
of cancer, lymph-gland juice in, 56.
of the cause of urinary retention in
the male, 665.
of carbuncle, 205.
of chronic heart disease, 526.
of certain functional derangements of
the abdominal organs due to dis-
turbance of the solar plexus, 935.
of congenital talipes, 301.
of diphtheria, 792.
of diphtheria, points in, 478.
of the dysphagia of tubercular laryn-
gitis by the product of the microbic
culture, 621.
of eclampsia, 774, 829.
of eclampsia by infusion of salt solu-
tion 465.
of eczema in infants and children, 371.
of elephantiasis with calomel, 332.
of epididymitis, the efficacy of
guaiacol in, 374.
of erysipelas by carbolic and camphor,
858.
of erysipelas, alcohol in, 227.
of erysipelas, 301.
of lupus erythematosus by scarifica-
tion and pressure pads, 609.
of exophthalmic goiter with sulphate
of quinin, 296.
of furuncle with salicylic acid, 771.
of recent fractures of the patella by
open operations in, 379.
of furunculosis, 126.
of gonorrheal vaginitis, 548.
of granular conjunctivitis by salicylic
acid, 143.
of gonorrhea, 222.
of hip disease and its results, 539.
of hyperemic laryngitis by applica-
tions of a one per cent. solution of
suprarenal liquid, 141.
of habitual constipation, non-medic-
inal, 119.
of hay fever, 705.
of hematomasis, 224.
of indolent ulcers, 499.
of incipient phthisis, climate cure
in, 859.
of irreducible cancer of the uterus;
experiment in, 226.
in lupus erythematosus, amenability
to, 126.
of lupus vulgaris by local applica-
tions of creasote, 125.
of malignant tumors by bactericidal
toxins and antitoxins and cancerous
serums, 196.
modern views on eczema and their in-
fluence upon, 88.
of movable kidney, 444, 628.
of the male genito-urinary organs, the
neglect of sexual symptoms in the,
943.
of ozena by citric acid, 863.
of ovarian disease by the use of
parotid gland extract, 710.
of the occipitoposterior positions, the
value of position in, 549.
of ophthalmia tarsi, 865.
of pus, 832.
- Treatment of prostatic hypertrophy, 623.
of puerperal fever, 309.
of pruritus, 771.
of placenta previa by induction of
labor and version, 67.
of fracture of the patella, advisability
of bone suturing, 619.
of pneumonia based on the conditions
of the vasomotors, 35.
of phantom tumors, medical and
surgical, 791.
of quinsy, 310.
and removal of inoperable malignant
growths, formalin in, 451.
of sloughing corneal ulcers, 60.
of sarcoma by Coley's fluid, 139.
of renal diseases, Von Noorden on,
391.
surgical, of neuralgia, 456.
of secondary syphilis, 708.
of syphilis, 787.
of skin cancers, 75.
of tetanus by means of intracerebral
injections of antitoxin, 443.
of tetanus by the intracerebral in-
jection of antitoxin, 288.
of tetanus, 937.
of typhoid with chloral, 696.
of uremia by water diet, 795.
of urethral discharges, 306.
of umbilical stump, 550.
of varix, with especial reference to
thrombosis, 52.
of whooping cough by inhalation of
medicated oxygen, 372.
- Troublesome vesicular eruption cured by
circumcision, 857.
- True pneumonia, unusual types of fever in,
116.
aproxia without complicating im-
pairment of hearing, 458.
- Tubercle bacillus in the feces, demonstration
of, 664.
- Tuberculosis, bacillus of, 39.
climate in the treatment of, 778.
endocarditis, the experimental pro-
duction of, 197.
and cooking, 46.
contagiousness of, 299.
diet in, 616.
the influence of milk supply in the
spread of, 299.
is it infectious? 538.
in Ireland, distribution of, 377.
and heredity, 362.
a new and promising remedy for, 232.
pseudo, 453.
the Roentgen rays and their use in
the diagnosis of, 198.
early signs of, 61.
and the spitting nuisance, 715.
- Tuberculous sputum in children, examination
of, 239.
- Tubercular patients; a few observations on
the action of hypodermatic injections of a
2½ per cent. solution of sodium cinnamate
on, 209.
- Tumor of the hypophysis without akromegaly,
287.
- Tumors of gigantic size, 946.
- Two epidemics of alopecia areata in an
asylum for girls, 927.

Typhoid bacillus in the urine; the appearance of, 524.
treatment of, with chloral, 696.
fever, ovarian tumor removed during, 547.
fever, elimination in, 552.
fever, hemorrhagic diathesis in, 827.
fever in Oberbipp, an epidemic of, 918.
fever, oculomotor paralysis from, 707.
and typhoidal complications, 375.
fever with reference to the proposed metropolitan drainage system, the cause and prevention of, 54.
Typhomalaria fever, so called, 195.
Typhus abdominalis, a contribution to the etiology and hematology of, 918.
Tyson, Professor, on the general practitioner, 5.

U.

Ulcerative bronchopneumonia, 920.
Ulcers, indolent, treatment of, 499.
Umbilical stump, alcohol in the sterilization of, 871.
stump, treatment of, 550.
Uncomplicated immature cataract by conjoined manipulation and instillation, the absorption of, 941.
Unorganized ferments, an experimental study of the effects of hydrogen dioxid upon normal action of, 118.
Unique case of spontaneous gastroentero-anastomosis, 709.
Upon the condition of the uterus after the extirpation of both ovaries and after transplantation to another place in the abdominal cavity, 945.
Ureters, the reflux of air into the, 861.
Urethritis in male children, 218.
Urethra, general staphylococcus infection originating in, 223.
Urethral discharges, treatment of, 306.
obstruction, a grooved perineal cannula to be used as a guide in performing perineal sections in cases of, 708.
Uric acid, some experiments in, 34.
Urine, acetosoluble albumin in the, 531.
of healthy infants and children, 129.
retention of, 626.
diphtheria bacilli in, 53.
analysis, lead dioxid in, 671.
some neglected points in examination of, 108.
incontinence of, 799.
Urino-glucosometer, 855.
Urticaria and odors, 621.
pigmentosa, report of three cases of, 46.
Use of rubber splints in intranasal operations, 940.
and abuse of midwifery forceps, 150.
of morphia in cardiac disease, 210.
Uterus again, 547.
Uterine perforation during curettage, 225.
hemorrhage, stypticin in, 536.
fibroids, effect of thyroid extract on, 225.
operations, on the prevention of sepsis after laparotomy in, 384.
mucosa after abortion, behavior of, 872.
cancer, application of heat to, 147.

Uterus, massage in malposition of, 548.
after the extirpation of both ovaries
and after transplantation to another place in the abdominal cavity, upon the conditions of the, 945.
treatment of retrodisplacements of, 742.
can ergot cause the rupture of? 627.
inversion of, 627.
and operations for laceration of the cervix, curettage of, 548.

V.

Vaccination in England and Scotland, 97.
Vagina during labor, rupture of, 626.
Vaginal douches, antepartum and postpartum, 871.
fixation, procedure in, 147.
section, 149.
Value of dust, 467.
of bacteriological examination to the practitioner, 658.
Van Harlingen, A., modern views on eczema and their influence upon its treatment, 88.
Varicose veins of the leg, operative treatment of, 619.
Varix; its cause and treatment with especial reference to thrombosis, 52.
Vascular supply of kidney, 788.
Vegetable parasite in cancerous affections, 599.
Ventral hernia, 547.
Veratrum viride in puerperal eclampsia, 211.
Vicarious urination from the leg, 239.
Vision, report of a case of complete monocular blindness following an injury to the head, attended by full restoration of, 767.
Van Noorden, Carl, Prof., treatment of the chronic diseases of the kidneys, 325.
Vulva, epithelioma of, 625.

W.

Warts, chrysarobin a specific for, 774.
Water supply of Paris, 454.
What constitutes an excess of hydrochloric acid, 873.
White nails, 609.
Whooping-cough, treatment of, by medicated oxygen, 372.
diphtheria antitoxin in, 35.
by inhalation of medicated oxygen, treatment of, 372.
Why the child strains at stool and a means for its relief, 694.
Widal's method used in differentiating the bacillus of hog cholera from other microorganisms, 363.
Wilson, J. C., digitalis in mitral disease of the heart, 163.
Women students in Russia, subjection of, 149.
Woman with a penis, 399.
Wounds, the oxygen treatment of, 540.

X.

Xeroderma pigmentosum, 912.

Y.

Yellow fever and malaria, mosquitoes as transmitters of, 700.
Young children, how to give medicine to, 269.

Z.

Zanthomata, the nature of, 770.
Zinc salts in clothing, 370.



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